

TWR- 18764/13

SPACE SHUTTLE REDESIGNED SOLID ROCKET MOTOR CERTIFICATE OF QUALIFICATION (COQ) DATA REPORT

August 1990

APPROVED BY NASA: SA51-395-90, 13 SEPT. 1990

## Prepared for:

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(NASA-CR-184051) SPACE SHUTTLE REDESIGNED SOLID ROCKET MOTOR CERTIFICATE OF QUALIFICATION (COQ) DATA REPORT (Thickol Corp.) 103 p CSCL 21H

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VOL

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Space Shuttle Redesigned Solid Rocket Motor Certificate of Qualification (COQ) Data Report

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Engineering

Design Engineering

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Thickol CORPORATION

**SPACE OPERATIONS** 

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## PREFACE

## The following COQs were submitted with this data report:

COQ	COMPONENT Subsystem	SUBMITTAL <u>Date</u>	EFFECTIVITY
18764-01 18764-14	Case, Stiffener Rings Joint Protection System	17 AUG 90 17 AUG 90	RSRM-13-17 RSRM-13

# The remaining COQs were submitted previously and approved for subsequent flights as follows:

COQ	COMPONENT SUBSYSTEM	APPROVAL <u>DATE</u>	EFFECTIVITY
18764-02	Case Joints	22 Jun 90	RSRM-12 & 13
18764-03	Igniter	1 DEC 89	RSRM-8 - 13
18764-04	Propellant	22 Jun 90	R\$RM-12 & 13
18764-05	Liner	22 Jun 90	RSRM-12 & 13
18764-06	Internal Insulation	1 DEC 89	RSRM-8 - 13
18764-07	Thermal Protection System	24 JUL 89	RSRM-4 - 13
18764-08	Systems Tunnel	29 JAN 90	RSRM-9 - 13
18764-09	Nozzie Assembly	22 Jun 90	RSRM-12 & 13
18764-10	Flex Bearing	1 DEC 89	RSRM-8 - 13
18764-11	Aft Exit Cone	22 Jun 90	RSRM-12 & 13
18764-12	Safe and Arm Device	22 Jun 90	RSRM-12 & 13
18764-13	Instrumentation	22 Jun 90	RSRM-12 & 13

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The Space Shuttle Redesigned Solid Rocket Motor (RSRM) Certification Program provides confidence that the RSRM and its components/subsystems meet or exceed Mission Oriented Requirements when manufactured per design requirements and specified/approved processes. Certification is based on documented results of tests, analyses, inspections, similarity and demonstrations. Compliance Statements are written to provide certification rationale in place of unreleased documentation. This report provides evidencing information to certify that each RSRM component/subsystem satisfies design, mission related requirements and objectives as specified in the Prime Equipment Contract End Item Detail Specification (CEI) CPW1–3600A.

This report was revised to eliminate duplication from flight set to flight set, such as, introductions, illustrations, etc. Only information necessary to support the current COQ issue is included. For complete background information and illustrations see TWR-18764 and TWR-18764/05.

## 2.0 PURPOSE

The purpose of this document is to provide information to support the Certificate of Qualification (COQ) MSFC form 511. This information gives objective evidence to verify that each component/subsystem of the RSRM satisfies all certification requirements.

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See TWR-18764 and TWR-18764/05 for a complete listing.

## 6.0 CERTIFICATION HISTORY

The certification history for the RSRM program is shown in tables 6.0-1 and 6.0-2. These tables include a component/subsystem description, effectivities, submittal dates, MSFC approval dates, NASA COQ numbers and remarks.

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TABLE 6.0-1 CERTIFICATION HISTORY FOR RSRM-1 thru RSRM-3

COMPONENT/SUBSYSTEM DESCRIPTION	EFFECTIVITIES	SUBMITTAL DATE	APPROVAL DATE	COQ NUMBER	REMARKS
RSRM Segment Assembly	360X001 360X002 360x003	5 AUG 88 19 OCT 88 6 DEC 88	23 AUG 88 30 OCT 88 25 JAN 89	17499-01 18762-01 18763-01	
Case	360X001 360X002 & 360X003	5 AUG 88 12 OCT 88	23 AUG 88 24 OCT 88	17499-02 18762-02	
Case Assembly Field Joint	360X001 360X002 & 360X003	9 AUG 88 17 OCT 88	23 AUG 88 30 OCT 88	17499-03 18762-03	
Case Assembly Nozzie Joint	360X001 360X002 & 360X003	9 AUG 88 17 OCT 88	23 AUG 88 30 OCT 88	17499-04 18762-04	*- <u></u> -
Case Assembly Factory Joint	360X001 360X002 & 360X003	5 AUG 88 12 OCT 88	23 AUG 88 30 OCT 88	17499–05 18762–05	
Case Assembly Igniter Joint	360X001 360X002 & 360X003	5 AUG 88 17 OCT 88	23 AUG 88 30 OCT 88	17499-06 18762-06	
Stiffener Rings	360X001 360X002 & 360X003	1 AUG 88 12 OCT 88	23 AUG 88 24 OCT 88	17499–07 18762–07	
Propellant	360X001 360X002 & 360X003	29 JUL 88 12 OCT 88	23 AUG 88 30 OCT 88	17499-08 18762-08	
Liner	360X001 360X002 & 360X003	29 JUL 88 6 OCT 88	23 AUG 88 24 OCT 88	17499-09 18762-09	· · · · · ·
Internal Insulation	360X001 360X002 & 360X003	1 AUG 88 13 OCT 88	23 AUG 88 30 OCT 88	17499-10 18762-10	
Thermal Protection System	360X001 360X002 360X003	5 AUG 88 22 SEP 88 14 DEC 88	23 AUG 88 9 NOV 88 25 JAN 88	17499-11 18762-11 18763-11	•   •
Systems Tunnel	360X001 360X002 & 360X003	4 AUG 88 19 OCT 88	23 AUG 88 30 OCT 88	17499–12 18762–12	
Nozzie Assembly	360X001 360X002 360X003	9 AUG 88 25 OCT 88 15 DEC 88	23 AUG 88 2 NOV 88 25 JAN 88	17499–13 18762–13 18763–13	

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# TABLE 6.0-1(cont) CERTIFICATION HISTORY FOR RSRM-1 thru RSRM-3

COMPONENT/SUBSYSTEM DESCRIPTION	EFFECTIVITIES	SUBMITTAL DATE	APPROVAL DATE	COO	REMARKS
Flex Bearing Assembly	360X001 360X002 & 360X003	5 AUG 88 19 OCT 88	23 AUG 88 30 OCT 88	17499–14 18762–14	
Aft Exit Cone	360X001 360X002 & 360X003	6 AUG 88 26 OCT 88	23 AUG 88 2 NOV 88	17499-15 18762-15	
igniter	360X001 360X002 & 360X003	8 AUG 88 20 OCT 88	23 AUG 88 30 OCT 88	17499-16 18762-16	
Safe & Arm Device	360X001 360X002 360X003	3 AUG 88 26 OCT 88 20 JAN 89	23 AUG 88 2 NOV 88 25 JAN 89	17499-17 18762-17 18763-17	
Operational Pressure Transducer	360X001 360X002 360X003	4 AUG 88 19 OCT 88 12 DEC 88	23 AUG 88 30 OCT 88 25 JAN 89	17499-18 18762-18 18763-18	
Joint Protection System	360X001 360X002 360X003	9 AUG 88 27 OCT 88 16 DEC 88	23 AUG 88 8 NOV 88 25 JAN 89	17499–19 18762–19 18763–19	
Development Flight Instrumentation	360X001 360X002 360X003	4 AUG 88 19 SEP 88 12 DEC 88	23 AUG 88 30 OCT 88 25 JAN 89	17499-20 18762-20 18763-20	

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# TABLE 6.0-2 (cont.) CERTIFICATION HISTORY FOR RSRM-4 AND SUBSEQUENT

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COMPONENT/SUBSYSTEM	SECONTINES	SUBMITTAL	APPROVAL	COQ	BEMARKS
DESCRIPTION	24IIVI フロートロ				DEMONING
Case Segments and	360X004	30 MAR 89	11 APR 89	18764-01	See TWR-18764
Stiffener Rings	360X005	30 JUN 89	24 JUL 89	18764-01A	See TWR-18764/05
	360X006	25 AUG 89	22 SEP 89	18764-01B	See TWR-18764/06
	360X007	6 OCT 89	24 OCT 89	18764-01C	See TWR-18764/07
	360X008	3 NOV 89	1 DEC 89	18764-01D	See TWR-18764/08
	360X009	21 DEC 89	29 JAN 90	18764-01E	See TWR-18764/09
	360X010	23 FEB 90	20 MAR 90	18764-01F	See TWR-18764/10
	360X011 & 360X012	23 MAR 90	04 APR 90	18764-01G	See TWR-18764/11
•					TOTOT CITED TO
Case Assembly Joints	360X004	30 MAH 89	TAPE 89	18/64-02	
	360X005	30 JUN 89	24 JUL 89	18764-02A	See TWR-18764/05
	360X006 & 360X007	25 AUG 89	22 SEP 89	1876402B	See TWR-18764/06
	360X008	3 NOV 89	1 DEC 89	18764-02C	See TWR-18764/08
-÷-	360X009 & 360X010	21 DEC 89	29 JAN 89	18764-02D	See TWR-18764/09
	360X011	23 MAR 90	04 APR 90	18764-02E	See TWR-18764/11
	360X012 & 360X013	25 MAY 90	22 JUN 90	18764-02F	See TWR-18764/12
fgniter	360X004 & 360X005	28 MAR 89	11 APR 89	18764-03	See TWR-18764
•	360X006 & 360X007	25 AUG 89	22 SEP 89	18764-03A	See TWR-18764/06
	360X008 - 360X013	3 NOV 89	1 DEC 89	18764-03B	See TWR-18764/08
		-			
Propellant	360X004 - 360X006	10 MAR 89	11 APR 89	18764-04	See TWR-18764
		6 OCT 89	24 OCT 89	18764-04A	See TWR-18764/07
DO	360X012 & 360X013	25 MAY 90	22 JUN 90	18764-04B	See TWR-18764/12
	4000000	000	44 400 00	20 42204	19701 GMT 0
	300X004 = 300X000	SO HAM OF	00 FOO +0	CO-+0/01	366   WR-16/64
		58 I SO 9	24 OCT 89	18/64-USA	See   WH-18/04/0/
TV	360X012 & 360X013	25 MAY 90	22 JUN 90	18764-05B	See TWR-18764/12
NR	400000	20 20 414	00 004 11	90 7520	Sec Tues 10764
	**************************************	60 LY 107	50 LLW	00-10-01	2010 I WIN - 10/04
18	360X005 - 360X000	30 JUN 89	24 JUL 89	18/64-06A	
	360X008 - 360X013	3 NOV 89	1 DEC 89	18764-068	See TWR-18/64/08
23. Thermal Protection	360X004	30 MAR 89	11 APR 89	18764-07	See TWR-18764
	260Y005 - 260Y013	30 MIII 90	00 111 60	18764-078	Cos TWD-1976A/05
name of 3	STOYOG - COOYOG	60 107 06	54 JOL 63	¥ 70-10-10-10-10-10-10-10-10-10-10-10-10-10	CO/50/01-UAL B9C
Systems Tunnel	360X004	28 MAR 89	11 APR 89	18764-08	See TWR-18764
· 	360X005	30 JUN 89	24 JUL 89	18764-08A	See TWR-18764/05
·	360X006 - 360X008	25 AUG 89	22 SEP 89	18764-08B	See TWR-18764/06
DL	360X009 - 360X013	21 DEC 89	29 JAN 90	18764-08C	See TWR-18764/09
THE ASSESSMENT OF THE PROPERTY	2602004	00 00 00	00 00 4 + +	10764 00	Coc TWD 10764
Nozzie Assembly	3600004	30 MAR 89	II AFR 69	60-60-60	See   WH-18/04
	SOUKUUS	30 200 88	24 JUL 89	18/64-09A	See IWH-18/64/05

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# TABLE 6.0-2 (cont.) CERTIFICATION HISTORY FOR RSRM-4 AND SUBSEQUENT

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	COMPONENT/SUBSYSTEM		SUBMITTAL	APPROVAL	000	
	DESCRIPTION	EFFECTIVITIES	DATE	DATE	NUMBER	REMARKS
		360X006 & 360X007	25 AUG 89	22 SEP 89	18764-09B	See TWR-18764/06
		360X008	3 NOV 89	1 DEC 89	18764-09C	See TWR-18764/08
		360X009	21 DEC 89	29 JAN 90	18764-09D	See TWR-18764/09
	-	360X010 & 360X011	23 FEB 90	20 MAR 90	18764-09E	See TWR-18764/10
		360X012 & 360X013	25 MAY 90	22 JUN 90	18764-09F	See TWR-18764/12
	Flex Rearing	360X004 & 360X005	31 MAR 89	11 APR 89	18764-10	See TWR-18764
		360X006 & 360X007	25 AUG 89	22 SEP 89	18764-10A	See TWR-18764/06
		360X008 - 360X013	3 NOV 89	1 DEC 89	18764-10B	See TWR-18764/08
	Att Ext Cone	360X004 & 360X005	29 MAR 89	11 APR 89	18764-11	See TWR-18764
		360X006 & 360X007	25 AUG 89	22 SEP 89	18764-11A	See TWR-18764/06
		360X008	3 NOV 89	1 DEC 89	18764-11B	See TWR-18764/08
		360X009	21 DEC 89	29 JAN 90	18764-11C	See TWR-18764/09
		360X010 & 360X011	23 FEB 90	20 MAR 90	18764-11D	See TWR-18764/10
		360X012 & 360X013	25 MAY 90	22 JUN 90	18764-11E	See TWR-18764/12
	Safe & Arm Device	360X004 & 360X005	29 MAR 89	11 APR 89	18764-12	See TWR-18764
		360X006 & 360X007	25 AUG 89	22 SEP 89	18764-12A	See TWR-18764/06
		360X008	3 NOV 89	1 DEC 89	18764-12B	See TWR-18764/08
		360X009	21 DEC 89	29 JAN 90	18764-12C	See TWR-18764/09
		360X010	23 FEB 90	20 MAR 90	18764-12D	See TWR-18764/10
DO		360X011	23 MAR 90	04 APR 90	18764-12E	See TWR-18764/11
C N		360X012 & 360X013	25 MAY 90	22 JUN 90	18764-12F	See TWR-18764/12
0.	(netrismantation	360X004 & 360X005	30 MAR 89	11 APR 89	18764-13	See TWR-18764
•		360X006 & 360X007	25 AUG 89	22 SEP 89	18764-13A	See TWR-18764/06
ΓW		360X008	3 NOV 89	1 DEC 89	18764-13B	See TWR-18764/08
R٠		360X09E	21 DEC 89	29 JAN 90	18764-13C	See TWR-18764/09
- 1		360X010 & 360X011	23 FEB 90	20 MAR 90	18764-13D	See TWR-18764/10
87		360X012 & 360X013	25 MAY 90	22 JUN 90	18764-13E	See TWR-18764/12
63,	. Ioint Profection	360X004	27 MAR 89	11 APR 89	18764-14	See TWR-18764
/1	System	360X005	30 JUN 89	24 JUL 89	18764-14A	See TWR-18764/05
.3		360X006 & 360X007	25 AUG 89	22 SEP 89	18764-14B	See TWR-18764/06
		360X00B	3 NOV 89	1 DEC 89	18764-14C	See TWR-18764/08
L		360X009	21 DEC 89	29 JAN 90	18764-14D	See TWR-18764/09
vo		360X010 - 360X013	23 FEB 90	20 MAR 90	18764-14E	See TWR-18764/10
L		360X012 & 360X013	25 MAY 90	22 JUN 90	18764-14F	See TWR-18764/12

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# 7.0 CERTIFICATION DOCUMENTATION

The certification documentation information provides evidence to verify that each component/subsystem of the RSRM satisfies all certification requirements.

The certification documentation is presented as follows:

SECTION	COMPONENT/SUBSYSTEM
7.1	Assembled motor
7.2	Case, Case Joints, Stiffener Rings
7.3	Igniter
7.4	Propellant
7.5	Liner
7.6	Internal Insulation
7.7	Thermal Protection System
7.8	Systems Tunnel
7.9	Nozzle, Flex Bearing, Aft Exit Cone
7.10	Safe and Arm Device
7.11	Instrumentation
7.12	Joint Protection System



# 7.1 ASSEMBLED MOTOR

The assembled motor data report contains an End Item Parts List (EIPL), Hardware Test Matrix (HTM) and CPI tables. The EIPL for the assembled motor includes all top level hardware configurations for the shipping segments, all component/subsystem assemblies at their top level assembly and any part numbers that are not covered by the subsequent sections. Notes indicate which component section EIPL presents a detailed hardware listing of the top level part.

Major changes between 360X012 and 360X013 are as follows:

ECP SRM 1805R3 - Locking Leak Check Port Plugs on Factory Joints

Incorporates locking leak check port plugs into the factory joints of the LH (A) aft segment of 360X013 and all subsequent motor sets, replacing the 1U100269-01 leak check port plug with the 1U100269-03 plug which has the locking feature.

ECP SRM 2046 - Igniter Adapter/Chamber Acceptance Criteria Update

Adds minor diameter and pitch diameter requirements to threaded hole inspection. In the event that a threaded hole does not pass initial "GO" gage inspection, pitch diameter and minor diameter will be inspected prior to initiating a DR. Opens nonsealing surface defect criteria for adapter flanges and chamber surface from 0.010 to 0.015 in. Opens defect criteria on adapter through holes from 0.005 to 0.015. Redefines the sealing surface of the chamber and adapter and. simplifies the measurements made to locate these surfaces. Ports located at 198, 305, 337.5 and 115 deg will be inspected for defects in sealing surfaces. Raised metal is allowed in nonsealing surfaces areas when it is below the minimum full thread requirement and is not in the interface area. Opens the special bolt hole O-ring sealing surface diameter from 0.628 to 0.630.

ECP SRM 2257R1 - FJPS Redesign

Redesign of the RSRM Field Joint Protection System (FJPS).

Eliminated:
Moisture Seal

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Polysulfide Adhesive Vent Adhesive Vent Valves Extruded Cork

The redesigned FJPS was implemented on all field joints of 360X013. The new design was bonded to the base paint coat. Cosmetic coat was sanded off to primer base.

ECP SRM 2275 - Add primer paint to pin retainer band to prevent case corrosion

Apply STW5-3226 primer to the interior surface of the pin retainer band and to the surfaces of the clevis in contact with the band. No masking will be made in the area of primer application. This change applies to factory joints only.

ECP SRM 2296 - Igniter Installation Preparation

Adds dimensions for both outer and inner joint putty layup. Implements use of standard measuring instrument (straightedge) to verify that no putty extends above the chamber flange in the inner joint. Incorporates use of 1U51916-09 grease in place of STW5-2942 grease. Three diamond shaped guide pins were used to align gasket and adapter, adapter was lowered by crane and hydraset, and chamber was held in place with shop aids. Outer bolt torque sequence in the planning was changed from a circular pattern to a crisscross pattern.

ECP SRM 2326 - Changes to Case Refurbishment Specifications

Redefines the field joint vent port (135 deg) sealing surface. The top 0.040 in. of the conical section is no longer defined as a sealing surface. Imposes a height of 0.004 in. on raised metal in nonsealing surface zones at the bottom of the last thread in the nozzle exit cone and segment field joint leak check (45 deg) ports. Also, defines thread runouts that may be interpreted as raised metal in the segment field joint vent ports (135 deg). The "J" dimension has been increased, and the conical surface face angle tolerances and the depth measurements which define this angle have been relaxed. The sealing surfaces of both factory and field joint O-ring grooves have been redefined. The forward walls of both primary and secondary O-ring grooves are no longer defined as sealing surfaces, but rather surfaces over which an Oring must pass. The sealing surface dimensions of both the inner clevis leg and the inner tang diameter have been decreased.

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TABLE 7.1-1 END ITEM PARTS LIST - FORWARD SHIPPING SEGMENT

TOP LEVEL PART NUMBER	PART DESCRIPTION	REV	ECO	NOTES
1U76989-05 1U76989-06	Segment Forward-TPS, Lid (L.H.) Segment Forward-TPS, Lid (R.H.)		3 3	8 8

SUB LEVEL PART NUMBER	PART DESCRIPTION	NOTES
1050131-13	Case Segment, Cylinder	1
1051473-03	Case Segment, Forward	1
1052983-02	Case Seg, Capture Cylinder	1
1075164-08	Igniter, Rocket Motor Modified L.H.	2
1075243-07	Tunnel Assembly, Forward Segment	5
1075348-03	Case Assembly, Forward Segment	3
1076570-03	Sub Assy, R.H. Fud, GEI Instr. (R.H.)	4
1U76571-04	Sub Assy, L. H. Fwd, GEI Instr. (L.H.)	
1076666-01	Case Assy, Fwd Segment Insulated	6
1076674-01	Segment, RSRM, Loaded, Fwd	l
1076674-02	Lined Case	1
1076699-03	Mod. Ign. Sys., Fwd Seg Assy (L.H.)	3
1076699-04	Mod. Ign. Sys., Fud Seg Assy (R.H.)	3
1076897-07	Bracket/Igniter Heater Assy (L.H.)	7
1076897-08	Bracket/Igniter Heater Assy (L.H.)	7
1076979-01	Segment, Fwd Cable Assy	7
1076986-01	Segment, Fwd TPS	8
L-P-523, type II, CLI	Film, FEP	ŀ
STW5-2788	Paint, Silkscreen	
STW5-3223	Inhibitor	6
STW5-3224	Liner	9
STW5-3343	Propellant	10

NOTE 1 : See Case End Item Parts List (EIPL)

NOTE 2 : See Igniter EIPL

NOTE 3 : See Case Joints EIPL NOTE 4 : See Instrumentation EIPL

NOTE 5 : See Systems Tunnel EIPL

NOTE 6 : See Internal Insulation EIPL NOTE 7 : See Joint Protection System EIPL

NOTE 8 : See Thermal Protection System EIPL

NOTE 9 : See Liner EIPL

NOTE 10: See Propellant EIPL

NOTE 11: See Nozzle Assembly EIPL

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TABLE 7.1-2 END ITEM PARTS LIST - FORWARD CENTER SHIPPING SEGMENT

TOP LEVEL PART NUMBER	PART DESCRIPTION	REV	ECO	NOTES
1U76990-03 1U76990-04	Segment Fwd. CtrTPS, Lid (L.H.) Segment Fwd. CtrTPS, Lid (R.H.)			8 8

SUB	LEVEL PART	NUMBER	PART DESCRIPTION	NOTES
1052	982-03		Case Seg, Capt. Cyl, (Lt.Wt.)	1
1075	244-06		Tunnel Assy, Ctr Fwd Segment	5
1075	356-03		Case Assy, Center Segment	3
1076	572-03		Subassy, (R.H.) Fwd Ctr GEI Instr.	4
1076	573-03		Subassy, (L.H.) Fwd Ctr GEI Instr.	4
1076	667-01		Case Assy, Ctr Seg Insulated	6
1076	675-01		Segment, RSRM Loaded, Center	
1076	675-02		Lined Case	I
1076	980-01		Segment, Fwd Ctr Cable Assy	7
1076	987-01		Segment, Fwd Ctr TPS	8
L-P-	523,Type I	I.CLI	Film, FEP	1
_	-2672		Coating, Black	Ì
STW5	-2776		Paint, Polyethlene, Black	l
STU5	-2788		Coating, Silkscreen	
	-3223		Inhibitor	6
	-3224		Liner	9
	-3225 Type	II	Coating, Black	
	-3343		Propellant	10

NOTE 1 : See Case End Item Parts List (EIPL)

NOTE 2 : See Igniter EIPL
NOTE 3 : See Case Joints EIPL
NOTE 4 : See Instrumentation EIPL
NOTE 5 : See Systems Tunnel EIPL
NOTE 6 : See Internal Insulation EIPL
NOTE 7 : See Joint Protection System EIPL
NOTE 8 : See Thermal Protection System EIPL

NOTE 9 : See Liner EIPL NOTE 10: See Propellant

NOTE 11: See Nozzle Assembly EIPL

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TABLE 7.1-3 END ITEM PARTS LIST - AFT CENTER SHIPPING SEGMENT

TOP LEVEL PART NUMBER	PART DESCRIPTION	REV	ECO	NOTES
1076991-03 1076991-04	Segment, Aft Ctr-TPS, Lid (R.H.) Segment, AFt Ctr-TPS, Lid (L.H.)			8 8

SUB LEVEL PART NUMBER	PART DESCRIPTION	NOTES
1050717-05	Case, Segment, Cylinder, Light Wt	1
1052982-03	Case, Seg, Capture, (Lt.Wt.)	1
1075356-03	Case Assy, Center Segment	3
1U75813-06	Tunnel Assy, Aft Ctr Segment	5
1u76574-03	Sub Assy, R.H. Aft Ctr, GEI Instr	4
1076575-03	Sub Assy, L.H. Aft Ctr, GEI Instr	4
1076667-01	Case Assy, Ctr Seg Insulated	6
1076675-01	Segment, RSRM Loaded Center	
1076675-02	Lined Case	
1076981-01	Segment Aft Ctr, Cable Assy	7
1076988-01	Segment, Aft Ctr-TPS	8
L-P-523, Type II, CLI	Film, FEP	
STW5-2672	Coating, Black	
STW5-2776	Coating, Black	
STW5-2788	Coating, Silkscreen	
STW5-3223	Inhibitor	6
STW5-3224	Liner	9
STW5-3225, Type II	Coating, Black	1
STW5-3343	Propellant	10

NOTE 1 : See Case End Item Parts List (EIPL)

NOTE 2 : See Igniter EIPL NOTE 3 : See Case Joints EIPL

NOTE 4 : See Instrumentation EIPL

NOTE 5 : See Systems Tunnel EIPL

NOTE 6 : See Internal Insulation EIPL NOTE 7 : See Joint Protection System EIPL NOTE 8 : See Thermal Protection System EIPL

NOTE 9 : See Liner EIPL

NOTE 10: See Propellant EIPL

NOTE 11: See Nozzle Assembly EIPL

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TABLE 7.1-4 END ITEM PARTS LIST - AFT SHIPPING SEGMENT

TOP LEVEL PART NUMBER	PART DESCRIPTION	REV	ECO	NOTES
1U76657-03 1U76756-01	Segment, Aft-TPS, Lid (L.H.) Segment, Aft-TPS, Lid (R.H.)		2	8

1050129-11	SUB LEVEL PART NUMBER	PART DESCRIPTION	NOTES
1U50715-05, 06 1U50767-01 1U51711-01 1U51845-01 1U52336-01 1U52337-01 1U52341-08 1U52342-02 1U52841-12 1U75245-09, 10 1U75370-03 1U75544-01 1U76497-03, 04 1U76680-01, 05 1U76676-01, 09 1U76676-01, 09 1U76676-01, 09 1U76676-02, 10 1U76676-02, 10 1U76676-03, 04 L-P-523, Typ II, CL I Sase Seg., Stiffener (Lt. Wt.) 1 Base, Cable Mounting Plug Protective, Nozzle 11 11 11 11 11 11 11 11 11 11 11 11 11	1050129-11		
1U50767-01 1U51711-01 1U51845-01 1U52336-01 1U52337-01 1U52341-08 1U52342-01 1U52342-02 1U52861-12 1U75245-09, 10 1U75246-09, 10 1U75370-03 1U75544-01 1U75642-01 1U76680-03, 04 1U76681-04 1U76688-04 1U76675-03, 04 1U76580-05 1U76675-03, 04 1U76580-04 1U76675-05 1U76676-02, 10 1U76676-03, 04 1U76676-04 1U76676-04 1U76676-05 1U76676-05 1U76676-06 1U76676-07 1U76757-08 1U76676-07 1U76757-08 1U76676-09 1U76676-0	1050130-11	Case Seg., Attach (Lt.Wt.)	
1051711-01	1050715-05, 06	Case Seg., Stiffener (Lt. Wt.)	1
1U51845-01 1U52336-01 1U52337-01 1U52341-08 1U52342-01 1U52342-02 1U52361-12 1U75245-09, 10 1U75246-09, 10 1U75370-03 1U75544-01 1U75642-01 1U76697-03, 04 1U76881-04 1U76881-04 1U766669-01, 05 1U76676-01, 09 1U76676-02, 10 1U76676-02, 10 1U76675-03, 04 L-P-523, Typ II, CL I STW5-3725 September States of S	1050767-01	Base, Cable Mounting	1
1U52336-01 1U52337-01 1U52337-01 1U52341-08 1U52342-01 1U52342-02 1U52861-12 1U75245-09, 10 1U75246-09, 10 1U75370-03 1U75544-01 1U75642-01 1U766497-03, 04 1U76581-04 1U7668-01, 05 1U76668-01, 05 1U76675-03, 04 1U76676-02, 10 1U76676-03, 04 1U76676-04 1U76676-05, 04 1U76676-05 1U76676-06 1U76676-07 1U7667	1051711-01	Plug Protective, Nozzle	11
1U52337-01 1U52341-08 1U52342-01 1U52342-02 1U52861-12 1U75246-09, 10 1U75370-03 1U75370-03 1U75642-01 1U76497-03, 04 1U76680-03 1U76680-01 1U76668-01, 05 1U76676-01, 09 1U76676-02, 10 1U76676-02, 10 1U76676-02, 10 1U76580-03 1U76676-03, 04 1U76676-03, 04 1U76676-03, 04 1U76676-01, 09 1U76676-03, 04 1U76676-04, 10 1U76676-05, 10 1U76676-05, 10 1U76676-06, 10 1U76676-07, 09 1U76676-08, 10 1U76676-09, 10 1U766	1051845-01	Plug	
1052341-08 1052342-01 1052342-02 1052861-12 1075245-09, 10 1075245-09, 10 1075370-03 1075544-01 1076497-03, 04 1076581-04 1076688-01 1076668-01, 05 1076673-01 1076676-02, 10 1076676-02, 10 1076757-03, 04 L-P-523, Typ II, CL I STW5-3225  Cable, Severance Bracket, Cable Bracket	1052336-01	Clamp, Cable Restraint	
1U52342-01 1U52342-02 1U52861-12 1U75245-09, 10 1U75246-09, 10 1U75370-03 1U75544-01 1U75642-01 1U75642-01 1U766497-03, 04 1U76581-04 1U76668-01, 05 1U76673-01 1U76676-02, 10 1U76676-02, 10 1U76675-07 SWD ASSY, LH. Aft Seg GEI Instr 4 1U76675-03 Aft Dome, Painted Sub Assy, R.H. Aft Seg GEI Instr 4 1U76668-01, 05 1U76676-01, 05 1U76676-02, 10 1U76676-02, 10 1U76675-03, 04 L-P-523, Typ II, CL I SWD ASSY, Aft Segment Aft Dome Insulated Segment, RSRM Loaded, Aft Lined Case Nozzle Assy, Aft Segment  Aft Dome Insulated Segment, RSRM Loaded, Aft Lined Case Nozzle Assy, Aft Segment SWD-5278 SWD ASSY, Aft Segment Aft Dome Insulated Segment, RSRM Loaded, Aft Lined Case Nozzle Assy, Aft Segment SWD-5278 SWD-5278 SWD-5278 SWD-52788 STWD-52788 STWD-3225 Liner Coating, Polyethylene Paint, Silkscreen Liner Coating, Black	1u52337-01	Clamp, Cable Restraint	
1U52342-02 1U52861-12 1U75245-09, 10 1U75246-09, 10 1U75370-03 1U75544-01 1U75642-01 1U766497-03, 04 1U76580-03 1U76580-04 1U76668-01, 05 1U76669-01, 05 1U76673-01 1U76676-02, 10 1U76675-03, 04 L-P-523, Typ II, CL I STW5-2776 STW5-2788 STW5-3225 STW5-3225 STW5-3225 STW5-3225 STW5-3225 STW5-3225 STW5-3224 STW5-3225 STW5-3225 STW5-3224 STW5-3225 STW5-3224 STW5-3225 STW5-3226	1052341-08	Cable, Severance	11
1U5286-12 1U75245-09, 10 1U75246-09, 10 1U75370-03 1U75544-01 1U75642-01 1U75642-01 1U76680-03 1U76580-03 1U76668-01, 05 1U76668-01, 05 1U76673-01 1U76676-02, 10 1U76675-03, 04 L-P-523, Typ II, CL I STW5-2776 STW5-2778 STW5-3225  Nozzle Assy, Final Cable Installation Aft Seg Tunnel Assy, Aft Segment Radius Mold Aft Dome, Painted Segment, Aft-TPS Sub Assy, R.H. Aft Seg GEI Instr Sub Assy, R.H. Aft Seg GEI Instr Case Assy, Aft Seg Insulated Segment, RSRM Loaded, Aft Lined Case Nozzle Assy, Aft Segment Film FEP Coating, Polyethylene Paint, Silkscreen Liner Coating, Black	1052342-01	Bracket, Cable	
1U75245-09, 10 1U75246-09, 10 1U75370-03 1U75370-03 1U75544-01 1U75642-01 1U76497-03, 04 1U76580-03 1U76581-04 1U7668-01, 05 1U76668-01, 05 1U76676-01, 09 1U76676-02, 10 1U76676-02, 10 1U76757-03, 04 L-P-523, Typ II, CL I STW5-2778 STW5-3225  Cable Installation Aft Seg Tunnel Assy, Aft Segment Radius Mold Aft Dome, Painted Segment, Aft-TPS Sub Assy, R.H. Aft Seg GEI Instr 4 Case Assy, Aft Seg Insulated Sarrel Assembly, Coated Aft Dome Insulated Segment, RSRM Loaded, Aft Lined Case Nozzle Assy, Aft Segment Film FEP Coating, Polyethylene Paint, Silkscreen Liner Coating, Black	1052342-02	Bracket, Cable	
1U75245-09, 10 1U75246-09, 10 1U75370-03 1U75544-01 1U75642-01 1U76497-03, 04 1U76580-03 1U76686-01, 05 1U76668-01, 05 1U76673-01 1U76676-02, 10 1U76675-03, 04 L-P-523, Typ II, CL I STW5-2778 STW5-3225  Cable Installation Aft Seg Tunnel Assy, Aft Segment Radius Mold Aft Dome, Painted Segment, Aft-TPS Sub Assy, R.H. Aft Seg GEI Instr 4 Sub Assy, L.H. Aft Seg GEI Instr 4 Case Assy, Aft Seg Insulated Barrel Assembly, Coated Aft Dome Insulated Segment, RSRM Loaded, Aft Lined Case Nozzle Assy, Aft Segment Film FEP Coating, Polyethylene Paint, Silkscreen Liner Coating, Black	1052861-12	Nozzle Assy, Final	11
1U75370-03 1U75344-01 1U75642-01 1U76497-03, 04 1U76580-03 1U76688-01, 05 1U76668-01, 05 1U76673-01 1U76676-01, 09 1U76676-02, 10 1U76676-02, 10 1U76757-03, 04 L-P-523, Typ II, CL I STW5-2776 STW5-2776 STW5-3224 STW5-3225  Barrel Assembly, Cated Aft Dome Insulated Segment, RSRM Loaded, Aft Lined Case Nozzle Assy, Aft Segment  Film FEP Coating, Polyethylene Paint, Silkscreen STW5-3224 STW5-3225  Barrel Assembly, Aft Segment Aft Dome, Painted Segment, Aft Seg GEI Instr Case Assy, Aft Seg Insulated SEGMENT, RSRM Loaded, Aft Lined Case Nozzle Assy, Aft Segment STW5-3224 STW5-3225  Coating, Polyethylene STW5-3225	1075245-09. 10		İ
1U75370-03 1U75544-01 1U75642-01 1U76497-03, 04 1U76580-03 1U76581-04 1U76668-01, 05 1U76669-01, 05 1U76675-01 1U76676-02, 10 1U76676-02, 10 1U76675-03, 04 L-P-523, Typ II, CL I STW5-2776 STW5-2788 STW5-3224 STW5-3225  Barrel Assembly, Aft Seg GEI Instr Case Assy, Aft Seg Insulated Aft Dome Insulated Segment, RSRM Loaded, Aft Lined Case Nozzle Assy, Aft Segment FEP Coating, Polyethylene Paint, Silkscreen Liner Coating, Black	1075246-09, 10	Tunnel Assy, Aft Segment	5
1U75544-01 1U75642-01 1U76497-03, 04 1U76580-03 1U76581-04 1U7668-01, 05 1U76669-01, 05 1U76673-01 1U76676-01, 09 1U76676-02, 10 1U76676-02, 10 1U76675-03, 04 L-P-523, Typ II, CL I STW5-2776 STW5-2788 STW5-3224 STW5-3225 Radius Mold Aft Dome, Painted Segment, Aft Seg GEI Instr 4 Sub Assy, L.H. Aft Seg GEI Instr 4 Case Assy, Aft Seg Insulated 6 3 Aft Dome Insulated 3 Aft Dome Insulated Segment, RSRM Loaded, Aft Lined Case Nozzle Assy, Aft Segment 3 L-P-523, Typ II, CL I Film FEP Coating, Polyethylene STW5-3224 STW5-3225 Coating, Black		Barrel Assembly, Aft Segment	
1U76497-03, 04 1U76580-03 1U76581-04 1U76668-01, 05 1U76669-01, 05 1U76673-01 1U76676-01, 09 1U76676-02, 10 1U766757-03, 04 L-P-523, Typ II, CL I STW5-2776 STW5-2788 STW5-3224 STW5-3225 Sub Assy, Aft Seg GEI Instr Case Assy, Aft Seg Insulated 6 Aft Dome Insulated Segment, RSRM Loaded, Aft Lined Case Nozzle Assy, Aft Segment Film FEP Coating, Polyethylene Paint, Silkscreen Liner Coating, Black	1075544-01		
1U76580-03 1U76581-04 1U76688-01, 05 1U76669-01, 05 1U76673-01 1U76676-01, 09 1U76676-02, 10 1U76675-03, 04 L-P-523, Typ II, CL I STW5-2776 STW5-2788 STW5-3224 STW5-3225 SWB Assy, R.H. Aft Seg GEI Instr 4 Case Assy, Aft Seg Insulated 6 Barrel Assembly, Coated 7 Aft Dome Insulated 8 Segment, RSRM Loaded, Aft Lined Case 8 Nozzle Assy, Aft Segment 8 TEP Coating, Polyethylene 9 STW5-3224 Liner Coating, Black	1075642-01	Aft Dome, Painted	
1U76580-03       Sub Assy ,R.H. Aft Seg GEI Instr       4         1U76581-04       Sub Assy, L.H. Aft Seg GEI Instr       4         1U76668-01, 05       Case Assy, Aft Seg Insulated       6         1U76679-01, 05       Barrel Assembly, Coated       3         1U76676-01, 09       Aft Dome Insulated       3         1U76676-02, 10       Lined Case       4         1U76757-03, 04       Lined Case       4         L-P-523, Typ II, CL I       Film FEP       5         STW5-2776       Coating, Polyethylene       9         STW5-3224       Liner       9         STW5-3225       Coating, Black       9	1076497-03. 04	Segment, Aft-TPS	8
1U76581-04       Sub Assy, L.H. Aft Seg GEI Instr       4         1U76668-01, 05       Barrel Assembly, Coated       3         1U76673-01       Aft Dome Insulated       3         1U76676-01, 09       Segment, RSRM Loaded, Aft       Lined Case         1U76757-03, 04       Lined Case       Nozzle Assy, Aft Segment       3         L-P-523, Typ II, CL I       Film FEP       Coating, Polyethylene         STW5-2776       Coating, Polyethylene       Paint, Silkscreen         STW5-3224       Liner       9         STW5-3225       Coating, Black		Sub Assy ,R.H. Aft Seg GEI Instr	4
1U76668-01, 05       Case Assy, Aft Seg Insulated       6         1U76669-01, 05       Barrel Assembly, Coated       3         1U76673-01       Aft Dome Insulated       3         1U76676-01, 09       Segment, RSRM Loaded, Aft       Lined Case         1U76757-03, 04       Nozzle Assy, Aft Segment       3         L-P-523, Typ II, CL I       Film FEP       STW5-2776         STW5-2778       Coating, Polyethylene       Paint, Silkscreen         STW5-3224       Liner       9         STW5-3225       Coating, Black	1076581-04	Sub Assy, L.H. Aft Seg GEI Instr	4
1U76669-01, 05 1U76673-01 1U76676-01, 09 1U76676-02, 10 1U76757-03, 04 L-P-523, Typ II, CL I STW5-2776 STW5-2788 STW5-3224 STW5-3225 Barrel Assembly, Coated Aft Dome Insulated Segment, RSRM Loaded, Aft Lined Case Nozzle Assy, Aft Segment Film FEP Coating, Polyethylene Paint, Silkscreen Liner Coating, Black	1076668-01, 05		
1U76676-01, 09 1U76676-02, 10 1U76757-03, 04 L-P-523, Typ II, CL I Film FEP STW5-2776 STW5-2788 STW5-3224 STW5-3225 SPENDED TO SERVE TO STW5-3225 SPENDED TO SERVE TO SERVE THE STW5-3225 SPENDED TO SERVE THE			3
1U76676-02, 10 1U76757-03, 04 L-P-523, Typ II, CL I Film FEP STW5-2776 STW5-2788 STW5-3224 STW5-3225 Liner Coating, Polyethylene Paint, Silkscreen Liner FCoating, Black	1076673-01	Aft Dome Insulated	
1U76676-02, 10 1U76757-03, 04 L-P-523, Typ II, CL I Film FEP STW5-2776 STW5-2788 STW5-3224 STW5-3225 Liner Coating, Polyethylene Paint, Silkscreen Liner FCoating, Black	1U76676-01. 09	Segment, RSRM Loaded, Aft	
1U76757-03, 04 L-P-523, Typ II, CL I Film FEP STW5-2776 STW5-2788 STW5-3224 STW5-3225 Coating, Polyethylene Paint, Silkscreen Liner Coating, Black			
L-P-523, Typ II, CL I Film FEP STW5-2776 Coating, Polyethylene STW5-2788 Paint, Silkscreen STW5-3224 Liner 9 STW5-3225 Coating, Black		Nozzle Assy, Aft Segment	3
STW5-2776 Coating, Polyethylene STW5-2788 Paint, Silkscreen STW5-3224 Liner 9 STW5-3225 Coating, Black			
STW5-2788 Paint, Silkscreen STW5-3224 Liner 9 STW5-3225 Coating, Black			
STW5-3224 Liner 9 STW5-3225 Coating, Black			
STW5-3225 Coating, Black			9
	1	1	1
STW5-3343	1 - /	Propellant	10

NOTE 1: See Case End Item Parts List (EIPL)

NOTE 2: See Igniter EIPL

NOTE 3: See Case Joints EIPL NOTE 4: See Instrumentation EIPL

NOTE 5: See Systems Tunnel EIPL

NOTE 6: See Internal Insulation EIPL

NOTE 7: See Joint Protection System EIPL NOTE 8: See Thermal Protection System EIPL

NOTE 9: See Liner EIPL

NOTE 10: See Propellant EIPL

NOTE 11: See Nozzle Assembly EIPL

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TABLE 7.1-5 HARDWARE TEST MATRIX - SEGMENT ASSEMBLY

HARDWARE DESCRIPTION	PART NUMBER	DM9	QM6	QM7	PV1	GM8	FLT 1A	FLT 18	FLT 2A		FLT 3A	FLT 3B		CURRENT FLIGHTS
ROCKET MOTOR, FORWARD SEGMENT	1075421-01 1075421-02 1076138-01 1075421-03 1076138-02 1075663-01 1075664-01 1076150-01 1076151-01 1076550-01 1076989-05 1076989-06	x	X	x	x	x	x	x	×	×	x	x	13	13
ROCKET MOTOR, CENTER FWD SEG FORWARD	1U76040-01 1U75351-02 1U76139-100 1U75351-03 1U75940-01 1U75665-01 1U7666-01 1U76152-01 1U76153-01 1U76553-01 1U76590-03 1U76990-04	×	×	<b>X</b>	×	×	X	×	×	x	x	x	13	13
ROCKET MOTOR, CENTER AFT SEG	1075933-01 1075972-02 1075843-01 1075972-03 1075941-01 1075667-01 1076688-01 1076154-01 1076155-01 1076554-01 1076555-01 1076991-03 1076991-04	x	X	×	×	×	×	×	X	×	×	×	13	13
ROCKET MOTOR, AFT SEGMENT SEGMENT	1075432-01 1076375-01 1075845-01 1075789-01 1075789-01 1075669-01 1076156-01 1076156-01 1076556-01 1076557-01 1076556-01 1076657-03 1076756-01	x	X	×	×	×	×	x	×	×	×	×	13	13

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## 7.2 CASE

The case segments used on flight 360X013 are the same design configuration as that of flight 360X012. Several deviations were added to the HCM, applicable to subsequent flight sets, to allow a COQ effectivity beyond one flight.

## **CASE JOINTS**

The Joint configurations for flight 360X013 are the same design configuration as that of flight 360X012. Several deviations were added to the HCM, applicable to subsequent flight sets, to allow a COQ effectivity beyond one flight.

The field joint temperatures are maintained at 75 deg. F minimum prior to launch by the joint protection system. In case of failure of the redundant JPS heaters, Launch Commit Criteria (LCC) minimum temperatures of the primary o-ring are established on a flight-by-flight basis using calculated o-ring squeeze. These LCC minimum temperatures may be lower than the 75 deg. F qualification temperatures. Deviation RDW-0618 has been generated and will be implemented in the event of failure of the redundant JPS heaters.

### STIFFENER RINGS

The stiffener rings for flight 360X013 are the same design configuration as that of flight 360X012.

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TABLE 7.2-1 END ITEM PARTS LIST - CASE SEGMENTS

TOP LEVEL PART NUMBER	PART DESCRIPTION	REV	ECO	RH USE		NOTES
1050129-11	Case Seg., Aft	AA	46	3	3	
1050130-11	Case Seg., Attach (Lt.Wt.)	U	37	4	4	
1050131-13	Case Seg., Cyl. (Std.Wt.)	V	38	2	5	l
1050715-05	Case Seg., Stiffnr. (Lt.Wt.)	D	17		2	
1050715-06	Case Seg., Stiffnr. (Lt. Wt.)	D	18			
1050717-05	Case Seg., Cyl. (Lt. Wt.)	C	25	5,1	2,3	
1051473-03	Case Seg. Fwd. (Std. Wt.)	F	25		1	1
1052982-03	Case Seg., Capt. Cyl. (Lt. Wt.)	C	21	1		l
1052983-02	Case Seg., Capt. Cyl. (Std. Wt.)	D	12			



## TABLE 7.2-2 END ITEM PARTS LIST - STIFFENER RINGS

TOP LEVEL PART NUMBER	PART DESCRIPTION	REV	ECO
1076802-04	Aft Segment Build-up, RSRM	В	5

SUB LEVEL PART NUMBER	PART DESCRIPTION	RH USE	LH USE
1050230-19	Splice Plate		
1050230-25	Plate	l	
1051207-04	Screw		ļ
1051207-05	Screw		ŀ
1051207-07	Screw		ļ
1051207-08	Screw		
1052501-01	Insulated Stiffener Ring		
1052501-04	Insulated Stiffener Ring		
1052501-05	Insulated Stiffener Ring		
1052502-01	Stiffener Ring (alternate for -04)	l_	_
1052502-04	Stiffener Ring	3	3
1052502-05	Stiffener Ring		
1052502-06	Stiffener Ring (alternate for -05)	١.	
1052502-07	Stiffener Ring	!	1
1052502-08	Stiffener Ring	1	1 3
1052503-02	Splice Plate	3	3
1052503-04	Splice Plate (alternate for -02)	٦	,
1U52503-05 1U52504-02	Splice Plate Adapter	1	1
1052504-02	Adapter	4	4
1052504-05	Plate, Stiffener	-	7
1052505-02	Plate, (alternate for -01)	3	3
1052506-02	Splice Plate (painted)		
1052506-03	Splice Plate (painted)		
1052507-02	Adapter Plate, Painted		
1052508-01	Plate (painted)		
1052510-01	Bolt		
1052734-01	Bolt, Shoulder	1	
1052734-02	Bolt, Shoulder		ŀ
1052734-03	Bolt, Shoulder		
1052734-04	Bolt, Shoulder		ŀ
1052777-01	Washer, Countersunk		ļ
AN960C616	Washer		
AN960C816	Washer		
MS20002C8	Washer		
MS21042-L6	Nut		
MS21045-L8	Nut, Self Locking		
STW5-2672	Coating, White	1	}
STW5-2942	Lubricant		
STW5-2995	Primer	1	l
STW5-3225, TY 1	Coating, Epoxy (white)	1	
STW5-3226	Primer, Eproxy		
STW7-3657	Lubricant, Extra Refined	<u></u>	<u> </u>



TABLE 7.2-3 END ITEM PARTS LIST - CASE JOINTS

TOP LEVEL PART NUMBE	R PART DESCRIPTION	REV	ECC
1075348-03	Case Assy., Forward	В	12
1075356-03	Segment Assy., Center Segment	В	12
1075370-03	Barrel Assy., Aft Segment	В	17
1076668-01	Case Assy., Aft Segment Insulated	1	3
1076668-05	Case Assy., Aft Segment Insulated	A	12
1u76699-03, -04	Modified Ignition, Sys., Fud Seg.	A	5
1076757-03	Nozzie Assy., Aft Segment	1	
1076757-04	Nozzle Assy., Aft Segment		3
1076803-03	Assy. and Closeout-KSC	В	22

SUB LEVEL PART NUMBER	PART DESCRIPTION	RH USE	LH USE
10100269-01	Plug		
10100269-03	Plug, Machine Thread		
1050129-11	Case Seg., Aft		
1050130-11	Case Seg. Std. Attach		
1050131-13	Case Segment, Cylinder	2	5
1050159-02	Plug, Closure	_	
1050185-08	Case Seg., Stiffnr (Std.Wt.)	3	3
1050228-15	Packing, Preformed	-	_
1050228-20	Packing, Preformed		
1050228-22	Packing, Preformed		
1050228-25	Packing, Preformed		1
1050228-44	Packing, Preformed	1	
1050510-02	Screw (Alt. for 1075756-02)		
1050715-05	Case Seg., Stiffnr (Lt.Wt.)		3
1050715-06	Case Seg. Stiffnr. (alt for -05)		
1050716-08	Case Seg. Attach (Lt.Wt.)	3	3
1050716-09	Case Seg. Attach (Alt for -08)	٦	
1050717-05	Case, Seg, Cyl, Light-Weight	5 1	2,3
1051055-12	Pin, Straight, Headless (GFE)	1	1
1051473-03	Case Segment, Forward	1 '	i
1051473-04	Case Seg. Fwd (Alt. for -03)	٤	١,
1051569-01	Machine bolt		
1U51668-01  1U51899-04, 08 - 22	Plug, Dual Seal		
1051997-04, 08 - 22	Retainer, Pin-Field Joint Gasket (Gask-O-Seal)		
11152861-12	Nozzle Final Assembly		
1052982-03	Capture Cyl Lt-Wt Case Segment		1
1052983-02	Capture Cyl Lt-Wt Case Segment		1
1075150-25	Packing, Performed		'
1075167-01			
1075167-01	Bolt, Machine, Alt to -04 Bolt, Machine, Alt. to -05		1
1075167-02			
	Bolt, Machine	1	
1075167-05 1075374-01	Bolt, Machine	1	
1	Packing with Retainer		
1075374-02	Packing with Retainer		
1075756-02	Screw		
1075801-01	Packing, Lubricated		1
1075801-02	Packing, Lubricated		
1075801-14	Packing, Lubricated		
1075801-15	Packing, Lubricated		
1075801-16	Packing, Lubricated		1
1076034-01	Bolt, Alt. to -02	l	
1076034-02	Bolt, Case/Nozzle	1	
1076425-01	Plug, Adjustable		
1076425-02	Plug, Adjustable	1	
1076425-03	Plug, Adjustable		1
1076673-01	Aft Dome Insulated	1	
1077137-01	Gasket		l

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SUB LEVEL PART NUMB	PART DESCRIPTION	RH USE	L H USE
1U82699-01	Assembly, Retainer Band, Pin		
1082840-01	Alt. to 1082699-01.		
1082840-02	Retainer Band, Pin Assembly	į	
1u82840-03	Retainer Band, Pin Assembly		
1082842-01	Retainer		
1082843-02	Trunion, Threaded	İ	
1082843-03	Trunion, Low Profile	ĺ	
AN960-416L	Washer	ŀ	
MIL-5-8802, CL.B	Sealant		
MS16562	Pin, Spring		
MS20995C20	Lockwire		l
MS20995C32	Wire, safety or lock		
MS21206-C12	Washer	- 1	
NAS1351N4H36S	Screw Cap, Socket Head	ı	
STW3-3353	Joint Filler		1
STW4-2951	Coating		l
STW4-2955	Lubricant, air-drying	ļ	1
STW4-3266	Putty		l
STW4-3311	Adhesive, Polysulfide	-	1
STW5-2788	Coating	- 1	
STW5-3225, Ty.1	Epoxy Poly Coating	- 1	1
STW5-3226	Primer	-	1
STW5-3479	Adhesive, Pressure Sensitive		1
STW7-3657	Lubricant, Extra Refined	- 1	1

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TABLE 7.2-4 HARDWARE TEST MATRIX - CASE ASSEMBLY SEGMENTS

HARDWARE DESCRIPTION	PART NUMBER	STA	ATA	STA ATA TPTA	TPTA 2_2	1PTA 2_1	Ħ	<u></u>	Š.	\$	₹	Σ	DM9 QM6 QM7 PV1 QM8 FLT	FLT	FLT 2	FLT 3	CURRENT
Forward Std. Wt.	1051473-01 1051473-03 1051473-04	×							×	×	×	×	×	×	×	×	13
Cylinder Std. Wt.	1050131-11 1050131-13								×	×	×	×	×	×	×	×	13
Capture Cyl. Std. Wt.	1052983-01 1052983-02						· · · • · · · · ·		×	×	×	×	×	×	×	×	<b>£</b>
Cylinder Lt. Wt.	1050717-03 1050717-05		×						_×	×	×	×	×	×	×	×	13
Capture Cyl. Lt. Wt.	1052982-02 1052982-03	×	×	×	×	×			×	×	×	×	×	×	×	×	ž.
Stiffener Lt. Wt.	1050715-02 1050715-03 1050715-05 1050715-06	×		×	<u> </u>	×			×	×	×	×	×	×	×	×	<b>5</b> 5
(Std.Wt.)	1050185-08					<u> </u>											<u>!</u>
Attach Lt. Wt.	1050716-06 1050716-08	×	×	×	×	×	····-		×	×	×	×	×	×	×	×	
(Std.Wt.)	1050130-11																13
Aft-Std. Wt.	1U50129-10 1U50129-11	×		×	×_	×			×	×	×	×	×	×	×	×	ŧ.

HT = HYDRO IEST; HB = HYDRO-BURST TEST

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TABLE 7.2-5 HARDWARE TEST MATRIX - FIELD JOINTS

HARDWARE DESCRIPTION	PART NUMBER	DM9	QM6	QM7	PV1	QM8	FLT 1	FLT 2	FLT 3	CURRENT FL I GHTS
FWD INSULATED SEG	1075423-01	x								
FWD INSULATED SEG	1075423-02	- 1	x		x		x		x	1
FWD INSULATED SEG	1075423-03	1						x		İ
FWD INSULATED SEG	1075423-04			x				"		
FWD INSULATED SEG	1075423-06			^		x				ĺ
	1075425-08	- 1				^				13
FWD INSULATED SEG	10/0000-01	1								13
CTR INSULATED SEG	1U75428-01	x								
CTR INSULATED SEG	1075428-01	x								
CTR INSULATED SEG	1075428-100	l^	x							
	1075428-02		^		_					
CTR INSULATED SEG		ı		×	X		X			
CTR INSULATED SEG	1075428-03							X		
CTR INSULATED SEG	1075428-04			l	1				X	
CTR INSULATED SEG	1075428-07	ı				x				
CTR INSULATED SEG	1076667-01									13
		İ								
AFT INSULATED SEG	1U75434-01	X								
AFT INSULATED SEG	1075434-03		X	x						
AFT INSULATED SEG	1U75434-04	1			x			ŀ		
AFT INSULATED SEG	1U75434-02						x	x		
AFT INSULATED SEG	1u75434-05			l				x	x	
, . , , ,								^	^	
AFT INSULATED SEG	1075434-06					Х				
AFT INSULATED SEG	1076668-01	- [								13
AFT SEGMENT INSULATED	1076668-05									13
DEFECUSE APPARTING ADDRESS.	6717 7/71									
PRESSURE SENSITIVE ADHESIVE	STW4-3431	X								4.00
PRESSURE SENSITIVE ADHESIVE	STW5-3479		X	X	X	X	X	X	X	13
EXTRUSION, JOINT FILLER	STW3-3353	x	x	x	×	x	x	x	x	13
VENT PORT PLUG	10100269-01	x								
	1	^								
VENT PORT PLUG	1076386	į	X	X			X	X	X	
VENT PORT PLUG	1050159-02		X	X	Х	Х	X	Х	X	13
VENT PORT PLUG	1076425				X	X				13
	44000.40									
LK CHK PORT PLUG	10100269-01	X	Х	X	X		X	X	X	
LK CHK PORT PLUG	10100269-03						X			13
LVDT ASSEMBLY	7U76020-10					x				
	4									
PRI & SEC O-RING	1075150-25	×	X	х	X	X	X	X	X	
PRI & SEC O-RING	1075801-01									13
A157/57 A 571/A	4									
CAPTURE O-RING	1075150-11	×	Х	Х	X	×	X	X	X	
CAPTURE O-RING	7076367				Х					
CAPTURE O-RING	1075801-02									13
PINS	1051055	х	x	x	x	x	x	x	x	13
PIN RETAINER BAND	1082699-01	x								
PIN RETAINER BAND	1082840-01		х	х	х		х	x	x	
PIN RETAINER BAND	1082840-02			<i>-</i>		x	-			13
										•
LEAK TEST	STW7-3447	x	х	x	x	x	x	х	x	13
FEME 1591										
LEAK TEST	STW7-3661		х	х	x		x	х	х	13

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TABLE 7.2-6 HARDWARE TEST MATRIX - FACTORY JOINTS

1.

HARDWARE DESCRIPTION	PART NUMBER	DM9	QM6	QM7	PV1	SMP	FLT 1	FLT 2	FLT 3	CURRENT FL I GHTS
Forward Segment Assy	1075348-01	х								
Forward Segment Assy	1075348-02		x	x	х		x	X	x	
Forward Segment Assy	1075348-03					x				13
Center Segment Assy	1075356-01	x								
Center Segment Assy	1075356-100	- 1	x				İ			
Center Segment Assy	1075356-02	- 1	x	x	x		×	x	х	
Center Segment Assy	1075356-03					x				13
Aft Segment Barrel Assy	1075318-02		ŀ		x					
Aft Segment Barrel Assy	1075370-01	×								1
Aft Segment Barrel Assy	1075370-02		x	x	1		x	x	x	1
Aft Segment Barrel Assy	1075370-03				1					13
Aft Segment Barrel Assy	1076848-02									13
Aft Segment Insulated	1075434-01	x							:	
Aft Segment Insulated	1075434-03	ŀ	x	x	1	1				1
Aft Segment Insulated	1075434-04				x				1	1
Aft Segment Insulated	1075434-02	- [					x	x		]
Aft Segment Insulated	1075434-05	ĺ	l	1	1	1		x	x	1
Aft Segment Insulated	1075434-06	-			1	x				1
Aft Segment Insulated	1076668-01	-			1		l			13
Aft Segment Insulated	1076668-05	-		1		1				13

TABLE 7.2-7 HARDWARE TEST MATRIX - NOZZLE/CASE JOINT

HARDWARE DESCRIPTION	PART NUMBER	NJE 1A	NJE 2A	NJE 1	NJE I	NJE 38	1PTA 1_1	1-2	1PTA 2_1	1PTA 2_2	1PTA 1_3	DMO	946	a Zwo	PV1 QM8	48 FLT	T FLT	FLT	CURRENT FL IGHTS	ENT
Test	Closed Vessel	×	×	×	×	×	×	×	×	×	×									
Case Joint	MPW Radial Bolt	×	×	×	×	×	×	×	×	×	×									
Insulation	Baffle		×		×	×	×	×	×	_×_	×									
Test Defects	Vaccum Putty Shoe Lace Charnel Wiper O-ring Primary O-ring	×	××	××	×××	××××	×	×××	xxx	<b>**</b> *	×						<del></del>			
0-ring Material	Poly Siloxane Fluorocarbon	××	×	×	×	×	×	×	×	×	×									
Temperature	Joint	ĸ	ĸ	22	ĸ	8	28	75.9	118.6	71.8	82.0									
Fixed Mousing	1052945											×	×	<u>×</u>	<u>×</u>	×	×	×	13	
Aft Dome (Insul) Aft Dome (Insul)	1075641 1076673											×	×	<u>×</u> ×	×	×	×	×	13	
Bit Machine (Axi) Bit Machine (Rad) Bit Machine (Rad) Bit Machine (Rad)	1076034 1075167-05 1075167-04 1075167-02 1075167-01											××	××	××	××	××	×× ×	×× ×	ឯឯឯឯឯ	
O-ring Primary O-ring Wiper O-ring Wiper O-ring Secondary O-ring Secondary	1075150-26 1075801-15 1075150-27 1075801-14 1075150-28 1075801-16											× × ×	× × ×	× × ×	<u> </u>	<u> </u>	<u> </u>	× × ×	<u> </u>	
Vent Port Plug Vent Port Plug Vent Port Plug Vent Port Plug	1076386-01 1076386-04 1076425-02 1076425-03 1050159-02					× ×							××	× ×	× ×	× ×	××	<u> </u>	ឯឯឯ	
LEAK TEST LEAK TEST	STW7-3448 STW7-3661												××	××	××	××	××	××	£ £	

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TABLE 7.2-8 HARDWARE TEST MATRIX - IGNITER/CASE JOINT

HARDWARE DESCRIPTION	PART NUMBER	DM9	QM6	QM7	PV1	QM8	FLT 1	FLT 2	FLT 3	CURRENT FLIGHTS
Ignition System Segment Assy	1075421-01	x	Ţ,							
Ignition System Segment Assy	1075421-02		X	x						
Ignition System Segment Assy	1075882-01	- 1		^	x	ł		l		1
Ignition System Segment Assy	7U76547-01	1			^	x	1			
Ignition System Segment Assy	1075882-02	1				^	x			
Ignition System Segment Assy	1075165-01	-	1				^	x	ĺ	
Ignition System Segment Assy	1075165-02		1					^	IJ	
Ignition System Segment Assy	1075165-03			İ					X	47
Ignition System Segment Assy	1076699-03	ł					l			13 13
Ignition System Segment Assy	1076699-04	-		l					ļ	13
Machine Bolt	1051569-01	x	x	x	x	x	x	x	×	13
Washer, countersunk	MS21206C12	x	x	x	x	x	x	x	x	13
Gasket, outer (Gask-O-Seal)	1051927-01	x	x	x	x	x	x	x	x	
debutt, tate. (addr a seet)	1051927-02	^						<u> </u>		13



TABLE 7.2-9 HARDWARE TEST MATRIX - STIFFENER RINGS

HARDWARE DESCRIPTION	PART NUMBER	QM6	QM7	QM8	FLT 1	FLT 2	FLT 3	CURRENT FLIGHTS
Stiffener Ring	1052502-04	×	x	×	×	×	x	13
Stiffener Ring	1052502-07	×	x	x	x	x	x	13
Stiffener Ring	1052502-08	×	×	X	x	×	x	13
Splice Plate	1050230-19	×	x	x	x	x	x	13
Adapter Plate	1052504-05	×	x	x	x	x	x	13
Plate	1050230-25	×	x	x	x	x	x	13
Bolt, Shoulder	1052734-01	x	x	x	x	x	x	13
Bolt, Shoulder	1052734-02	x	x	x	x	x	x	13
Bolt, Shoulder	1052734-03	x	x	x	х	x	x	13
Bolt, Shoulder	1052734-04	×	X	x	X	x	×	13
Nut	MS21042-L6	x	x	x	x	x	x	13
Nut, Self Locking	MS21045-L8	x	x	X	X	x	x	13
Washer	AN960C616	x	x	x	x	×	x	13
Washer	AN960C816	×	x	x	х	x	x	13
Washer	MS20002C8	x	x	x	х	x	x	13
Washer, Counter Sunk	1u52777-01	x	х	x	х	x	х	13

REVISION			TABLE 7.2-10 REDESIGNED SOLID ROCKET BOOSTER WOTOR HARDWARE CERTIFICATION WATRIX CASE ASSEMBLY/STIFFENER RINGS/JOINTS		
'—	REQUIREMENT	METHOD	IMPLEMENTING	EVIDENCING	STATUS
	3.2 Characteristics	   × ×			
		< ×			
	= 1	× ·		4000	Page 12
	3.2.1.2 Pressure Seals	Anal.		1/2/1-XI	
		Anal	TWR-15/23: Vol.111, AHV-9.0	TWR-1/205	Closed
		Test	TUR-15723: Vol.11. SMX-1.0	TWR-17280	Closed
		Test	Vol.11	TWR-17371	Closed
		Test	Vol.11,	TWR-17372	Closed
		Test	Vol.11,	Tur-17373	Closed
		Test	Vol.11,	TUR-17453	Closed
		Test	Vol	TWR-17563	Closed
		Test		TWR-1/591	pesol:
		est	, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10	Tub-17001	Paso I
		Test	IMK-15/23: VOL.11, SEK-Y.U TUD-15727: Vol 11 T.IY-3 2	Tue - 18000	Closed
		Test	, I	Tur-18075	Closed
		Test	Vol. 11.	TWR-18428	Closed
		Test	Vol.11,	TWR-18624	Closed
		Insp		S40242M, S40242N	Closed
	3.2.1.2.1 Case Field Joints & Nozzle to	×			
	Case Joint Seals	,	0 7 0 7 min 111 170 2000 min	T115-4745	Peacl
	5.2.1.2.1.a Sealing	Acat Tect	IMK-15/25: VOL.111, ANV-4.0,6.0	WSTS-16007	Closed
SEC		165 T	-15723 Vol 11	TUR-17453	Closed
C NO		Test		TWR-16829	Closed
).		Test	Vol.11,	TWR-17371	Closed
TW		Test	Vol.11,	TWR-17372	Closed
R-		Test		TUR-17373	Closed
- 1		Test	Vol. 11,	TWR-17563	Closed
87		Test	Vol. 11,	14671-341	Closed
6		Test	\oldots	TWR-1/592	Closed
4/		Test	, i		pasolo
13		Test	, i	IWR-1/991, EE31(88-283)	Closed C
3 AG		Test	TIME-15/23: Vol. 11, 134-3.2	TUD 18075	pesolo
E		168	, = = = = = = = = = = = = = = = = = = =	TUC-18428	Closed
		Teet		TUR - 18624	Closed
VC	3.2.1.2.1.b Temperature range	Anal	Vol. 1X	TWR-16097	Closed
25		Anal		TWR-17033	Closed
<u> </u>		Anal	N/A	TWR-17416	Closed
		Test	TWR-15723: Vol.11, SGX 9.0	TuR-17991	Closed

"CS" indicates reference to a closure statement provided by the cognizant engineer that states compliance or rationale to satisfy the requirement for this flight.

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		TABLE 7.2-10 REDESIGNED SOLID ROCKET BOOSTER MOTOR HARDWARE CERTIFICATION MATRIX CASE ASSEMBLY/STIFFENER RINGS/JOINTS		
REQUIREMENT	METHOD	IMPLEMENTING	EVIDENCING	STATUS
	Test	N/A	NSTS-16007	Closed
	Test	-	TWR-18000	Closed
	Test	Vol.11,	TUR-17371	Closed
	Test	Vol.11,	Ture-17372	Closed
	Test	Vol.11	TWR-17373	Closed
	Test	TWR-15/25: Vol.11 TLX-3.1	TUR-17453	Closed
	Tect		Tub-17501	Closed
	Test	, No.	Tur. 17592	Closed
	Test	Vol.11,	TWR-18624	Closed
	Test	Vol. 11,	TWR-18075	Closed
	Test		TWR-18428	Closed
.c.i.c.i.c seal Verification	Test	TWR-15/25: Vol.II, 16X-5.0	TWR-1/3/1	Closed
	Test	, I	TUR-17372	Ciosed
	Test	Vol. 11,	TWR-17373	Closed
	Test	Vol.11,	TuR-17563	Closed
	Test	Vol. II,	TWR-18428	Closed
	Test	رم ا	TUR-17591	Closed
2 1 2 1 d Bone See 6	Test	TWR-15/25: Vol.11, TGX-19.0	TWR-1/592	Closed
ייייייי פסיס לעפוס	Test	, I	TUB-17371	pesol)
	Test	٧٥ ١٠.	TWR-17372	Closed
	Test	Vol.11,	TWR-17373, ROW-0541	Closed
	Test	  - 	TWR-17591	Closed
	Test	TUB-15/25: VOL.II, IGX-19.U	Tub 18000	Closed
5.2.1.2.1.e Sealing Margin	Anal	, , , , , , , , , , , , , , , , , , ,	Tub - 17118	Desc 1
	Test	Vol. 11,	TuR-17991	Closed
i.2.1.2.1.f Nozzle to Case Joint O-ring	Anal		TuR-15832	Closed
	Anal	٠, ١	TWR-15832	Closed
	Test	TUB-15723: VOL.II, 16A-3.0	THE-1/3/1	Closed
	100		11.07 - 17.57 Z	Descio
	Test		1275 - 1275 J	pase I
	Test	\o_{-1.10}	TUR-17592	Closed
5.2.1.3 Case	×			
1.2.1.3.a MEOP	Pat.	Vot.111,	TWR-17118	Closed
	est	Vol. 11.	14.05 11.17.405	Closed
	lest lest	TUB-15/23: VOL.111, THK-5.U	TWR-16/52	Closed
	Tect	; ; ;	Tue-17272	paso 1
	Test	\ \ \ \	148-17573	

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	REQUIREMENT	METHOD	IMPLEMENTING	EVIDENCING	STATUS
		Test	Vol.11,	TMR-17469	Closed
		Test	TWR-15723: Vol.11, TGX-6.0 TUR-15723: Vol.11, TGX-19.0	TUR-17591 TUR-17592	Closed
	3.2.1.3.b Structural Integrity	; ×			
	3.2.1.3.b.1 Case Membrane	Anal	Vol.111,	TWR-16873	Closed
		Anal	TWR-15723: Vol.111, ANV-2.0-8.0 TUB.15723: Vol.111, TWX-3.0	TUR-17118 TUB-16752	Closed
	3.2.1.3.b2 Case Joints	Anal	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Tur. 16873	Closed
		Anal		TWR-17118	Closed
		Test		TWR-16752	Closed
	5.2.1.3.C case Kisers	Anat	TUB-1572% VALIET, ANY-0.0	TUB-1710	pasol:
		Test		TWR-17373	Closed
		Test	15723: Vol.11,	TWR-17591	Closed
		Test	Vol.11,	TUR-17592	Closed
	( )	Test	TWR-15/25: Vol.111, THX-5.0	TWR-16/52	Closed
	5.2.1.3.T Mating Joints	Demo	Vol. 11.	TWR-16829	Closed
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		Demo	Vol. 111,	TWR-17927	Closed
		Demo	Vol. 1.	TWR-18075	Closed
	3.2.1.3.h Entry of Rain	Insp		TWR-1/242	Closed
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		Anal	TWR-15723: Vol.11, AGV-6.0	TWR-16877	Closed
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IABLE 7.2-10	REDESIGNED SOLID ROCKET BOOSTER MOTOR	HARDWARE CERTIFICATION MATRIX	CASE ASSEMBLY/STIFFENER RINGS/JOINTS
	REDES	2	CASE

REQUIREMENT   RETMO   IMPLEMENTING   EVIDENCING	REVISION		HARDWARE CERTIFICATION MATRIX CASE ASSEMBLY/STIFFEMER RINGS/JOINTS	: •	
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3.2.7 Environment x x 3.2.7 Environment x x 3.2.7.1 Matural Environment x x 3.2.7.1 Matural Environment x x 3.2.7.1.a Prelaunch x x 3.2.7.1.a Prelaunch x x 3.2.7.1.a Solar Radiation Anal TuR-15723: Vol.V, AOV-3.0 TuR-17009 Test TuR-15723: Vol.II, TGX-3.0 TuR-17371 Test TuR-15723: Vol.II, TGX-5.0 TuR-17373 Test TuR-15723: Vol.II, TGX-6.0 TuR-17373 Test TuR-15723: Vol.II, TGX-6.0 TuR-17373 Test TuR-15723: Vol.II, TGX-6.0 TuR-17391		Anel			Close
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3.2.7.1.a1 Solar Radiation Anal TWR-15723: Vol.v, AOV-3.0 TWR-17009  - 3.2.7.1.a2 Air Temperature Anal TWR-15723: Vol.v, AOV-3.0 TWR-17009  Test TWR-15723: Vol.11, TGX-3.0 TWR-17371  Test TWR-15723: Vol.11, TGX-5.0 TWR-17373  Test TWR-15723: Vol.11, TGX-6.0 TWR-17591  Test TWR-15723: Vol.11, TGX-6.10 TWR-17591	3.2.7.1.a Prelaunch	×			
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		Test	Vol.11,	TWR-18045	Close

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REVISION			REDESIGNED SOLID ROCKET BOOSTER MOTOR HARDWARE CERTIFICATION MATRIX CASE ASSEMBLY/STIFFENER RINGS/JOINTS		31702
	REQUIRENENT	METHOD	IMPLEMENTING	EVIDENCING	STATUS
	3.2.7.1.a3 Wind	Anal	TWR-15723; Vol.V. AOV-3.0	Tur-17009	Closed
		Anal	TWR-15723: Vol.11, AGV-11.0	RDW-0603, RDW-0603R1	Closed
	3.2.7.1.a5 Rain	Anal	-15723:	TWR-18136	Closed
		Test		Tur-11915	Closed
		Test	Vol.1X,	Tur-17242	Closed
	3.2.7.1.a6 Salt air	Simi	Vot . 11,	TWR-17808	Closed
		Simi		TWR-18617	pasol
	3.2.7.1.a7 Ozone	Anal	TWR-15/25: Vol.11, AGN-1.0	TWR-1861/	Closed
	3.2.7.1b Launch and ascent	× 4	0 1-MON 10-10-10-10-10-10-10-10-10-10-10-10-10-1	515-8/-0675 - Caction 7 1	Posol
	3.2.7.1.01 WIND	) A	IWK-13/23: VOL.V, MOV-3.0	313-04-03/3; section 3:1	
	3 2 7 1 cl Air/Sea Temperature	Anal	TUP-15723 - Vol 111 ANV-2 0 7 0 8 0	TUR-17118	Closed
	3.2.7.1.c2 Salinity	Simi		TWR-17808, TWR-11915	Closed
		Anal	TUR-15723: Vol.111, AHV-2.0,7.0,8.0		Closed
		Simi	TWR-15723: Vol.11, AGU-1.0	TWR-18617	Closed
	3.2.7.2 Induced Environment	×			
	3.2.7.2.1 Thermal	×			
	3.2.7.2.1.a Prelaunch	Anal		TWR-17009	Closed
	3.2.7.2.1.b Launch/Ascent	Anal			Closed
		Anal.	Vol. 111,	TUR-16527, TUR-19050	pesolo
		And i	Vol. III,	TWR-10490	pesolo
	5.2.7.2.1.c Ke-entry	And A	THE-15/23: VOL. 111, AMI-5.0	1WK-10320 Tib-14527 Tib-10050	Descio
		- F	701		Closed
-	3.2.7.2.1.d Plume Induced	Anal		TWR-16526	Closed
000		Anal	Vot. III.	TUR-16527, TUR-19050	Closed
: NC		Anat	Vol.111,	Tur-16496	Closed
).	3.2.7.2.2 Loads	×			
[WI		Anal	TWR-15723: Vol.111, AHV-2.0-8.0	TWR-17118	Closed
<u>R</u> -	Separation		111	37027 414	7
18		Na t	TW-15/25: VOL.111, AMV-Y.U	THE-1/202	
37		Test Test	,	TLIG-17373	
<u>64</u>		Test	Vol.VII.	TuR-17872	Closed
<u>/1</u>	3.2.7.2.2.b Post Separation Through	Anal	Vol.111,	TWR-17118	Closed
3		•			i
		Anal	Vol.VII,	TWR-1/8/2	Closed
$\perp$	5.2.6 Iransportability / Iransportation	A Lack	TUB-15/23: VOL.111, ANV-13 ()	TUB-17507 TUB-19821 R0N-050082	Closed
VC	3.2.8.a Size and Weight	Simi	\oldots		Closed
H.		Anal	Vol.111,	TWR-17597, RDW-599R2	Closed
	3.2.8.b Stresses	Simi		TWR-17808	Closed
		Simi	TWR-15723: Vol.111, AHV-9.0	TWR-1/265	Closed

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	1		Closed
	TUR-15723:	TWR-17597, TWR-19821, ROW-0599R2	Closed
3.2.8.c Natural Environments	TUR-15723:	•	Closed
	TWR-15723:	TUR-17322, TUR-17323, TUR-17324	Closed
	TWR-15723:	TWR-18617	Closed
3.2.9 Storage			
3.2.9.1 Post Acceptance Requirements	Simi TWR-15723: Vol. III, AHU-1.0	TWR-17808	Closed
-	TUR-15723: Vol. 11. A	TWR-18239, TWR-17808	Closed
	TWR-15723:	TWR-18617	Closed
3.3.1.1 Selection of Materials, Parts	TUR-15723: Vol.11,	cs 02-01	Closed
and Processes			
	Test CTP-0141	TWR-19912	Closed
3.3.5.5 Static Electricity and	Anal TWR-15723: Vol. II, AGV-21.0	S41384AR3	Closed
Lightning Protection			;
	Test CTP-0082	TWR-16390	Closed
3.3.6 Mechanical	×		
3.3.6.1 Design Safety Factors			
3.3.6.1.1 Structural Safety Factors	Vol. 111,	TWR-17118, RDW-0596R2	Closed
	5723:	RDW-0607, RDW-0621R1	Closed
	Vol. III,		Closed
	5723:	RDW-0607, RDW-0621R1	Closed
	t TUR-15723: Vol. 11,	TWR-17469	Closed
3.3.6.1.1.1 General Safety Factors	i TWR-15723: Vol.11, /	TWR-17469	Closed
	Simi TJR-15723: Vol. 111, ANU-1.0		Closed
	i TWR-15723: Vol. 11,	TWR-18239, TWR-17808	Closed
	Vol.11, J		Closed
NO		TWR-17118, ROW-0607, RDW-0621R1	Closed
	TWR-15723: Vol. 111,		Closed
TW	Vol. 111,		Closed
ın		TuR-17469	Closed
. 3.3.6.2 Allowable Mechanical Properties	TVR-15723:		Closed
	Vol. 11, A	TWR-18239, TWR-17808	Closed
-	Anal TWR-15723: Vol. 111, ANV-14.0	RON-0607, RON-0621R1	ctosed
	Vol. III,		Closed
	3	TWR-16873, RDW-0607, RDW-0621R1	Closed
.3	L TUR-15723:	TWR-17265	Closed
	TUR-15723: Vol. 11, A	TWR-18617	Closed
	t TuR-15723:	RDU-0607, RDU-0621R1	Closed
	SNX-17	TWR-16961, TWR-18011 Supp. A,B, & E	Closed
8 3.3.6.3 Ultimate Combined Loads	Simi TWR-15723: Vol. 111, AW-1.0		Closed
	i TUR-15723: Vol.11, AMV-1.	TuR-18239, TuR-17808	Closed
	Simi TUR-15723: Vol.11, AGH-1.0	TWR-18617	Closed

REVISION			REDESIGNED SOLID B HARDWARE CERTI CASE ASSEMBLY/STIM	REDESIGNED SOLID ROCKET BOOSTER MOTOR HARDWARE CERTIFICATION MATRIX CASE ASSEMBLY/STIFFENER RINGS/JOINTS		
	REQUIRENENT	METHOD	_	MPLEMENTING	EVIDENCING	STATUS
1		Anal	TUR-15723: Vol. III, ANV-9.0	AHV-9.0	TWR-17265, RDW-0579R2, RDW-0626	Closed
m	3.3.6.4 Proof Pressure Factors	Simi	TWR-15723: Vol. 111, AMW-1.0	AMV-1.0		Closed
		Anal	_	Vol.111, AHV-11.0	TWR-16873	Closed
		Test	-	TLX-6.0	TWR-17469	Closed
		Test	Vol. 111.	THX-3.0	TWR-16752	closed
M	3.3.6.4.1 Proof Factor Determination	Anal			TWR-16873	Closed
		Test		THX-7.0	TWR-17405	Closed
M	3.3.6.5 Life Factors	Simi	TWR-15723: Vol.111,		TWR-17808	Closed
		Sim		NGW-1.0	TWR-18617	Closed
		Anat	TWR-15723: Vol.11, AGV-3.0	1GV-3.0	RDN-0607, RDN-0621R1	Closed
		Anal	TUR-15723: Vol. 111, AHV-11.0	AHV-11.0	TWR-16873, RDW-0607, RDW-0621R1	Closed
		Anal	TWR-15723: Vol.111,	AHV-7.0	TuR-17118	Closed
M	3.3.6.8 Adhesive Bonding	- de		IGA-597.0	ROW-0555R2, R3	Closed
M	3.3.6.10 Locking Threaded Parts	- de		1G8-76.0	RDW-0617	Closed
	•	Insp	-	rGX-21.1	TuR-17639	Closed
m	3.3.8 Materials	<u>nsp</u>		IGA-384.0	CS 02-02	Closed
M	3.3.8.1 Moisture, Fungus Resistance and	- dsu		IGA-385.0	CS 02-03	Closed
	Oxidation		•			
M	3.3.8.2 Corrosion of Metal Parts	×				
M	3.3.8.2.a Corrosion Protection	<u>dsu</u>	TWR-15723: Vol.11,	Vol.11, 1GA-389.0	RDW-0627.	Closed
M	3.3.8.2.b Stress corrosion	Test	TWR-15723: Vol. 111, SHX 1.0	SHX 1.0	RDW 0607, RDW-0621R1	Closed
		And	TWR-15723: Vol. 111, AHV-11.0	AHV-11.0	TWR-16873	Closed
		Anal	TMR-15723: Vol.111, AHV-14.0	AHV-14.0	RDW-0607, RDW-0621R1	Closed
M	3.3.8.3 Flammability, Odor and	Insp d	TUR-15723: Vol.11,	Vol.11, 1GA-538.0	CS 05-04	Closed
	Offgassing					
M C	3.3.9 Contamination Control	- dsu	TWR-15723: Vol. 11, 1GB-85.0	168-85.0	RDU-0551R2, R3	Closed
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# 7.3 Igniter

REVISION

The igniter and the igniter adapter used on flight 12 thru 13 are identical to those used on flights 10 and 11. The only difference between the -04 Igniter assembly used on previous flights and the -08 used for flights 10 thru 13 is the inner gasket undergoes a 72 hour inspection in a plexiglass fixture (see ECP SRM-1998). This inspection resulted in the gasket being reidentified to a -02 instead of a -01. Deviation RDW-0528R4, which addressed reusable components and limited the effectivity to flight 10, was revised to RDW-0528R5 with an effectivity of flights 11 thru 13. The Igniter was previously submitted for flight 8 and was subsequently certified for use through flight 13.

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TABLE 7.3-1 END ITEM PARTS LIST - IGNITER ASSEMBLY

TOP LEVEL PART NUMBER	PART DESCRIPTION	REV	ECO
1075164-08	Igniter Rocket Motor Modified	В	11

SUB LEVEL PART NUMBER	PART DESCRIPTION	RH USE	LH USE
1U50046-01 1U50150-16 1U50152-03 1U50152-04 1U50152-06 1U50152-07 1U50154-01 1U50253-03 1U50257-01 1U50262-01 1U50278-12	Igniter Initiator Insulation Igniter Adapter Assembly Initiator Chamber Lined Initiator Chamber Insulated Initiator Chamber Assy Loaded Initiator Chamber Assy Loaded Igniter Initiator Chamber Identification Plate Tube Igniter Initiator Mozzle Insert Igniter Adapter	1	2
1U51369-02 1U51475-01 1U51569-01 1U51688-03 1U51894-01 1U51926-01 1U75162-01 1U75163-01 1U75163-02 1U75374-01 1U76598-01 1U76602-01 MIL-A-46050 MS16562-62 MS16562-64	Washer Machine Thread Plug Bolt Igniter Insert Disk Seal Inner Gasket Igniter Chamber Igniter Chamber Assy Insulated Igniter Chamber Assy Insulated Igniter Chamber Assy Loaded Packing with Retainer Bolt, Machine, Ultrasonic Bolt, Modified Adhesive Spring Pin Spring Pin		
MS20995C32 MS9048-358 STW4-2621 STW4-2806 STW4-2955 STW4-3266 STW5-2652 STW5-2667 STW5-2678 STW5-2712 STW5-2833 STW5-3224 STW5-3226 TT-L-50 TY II	Safety Wire Spring Pin Igniter Adapter Insulation Silicone Grease Lubricant Putty Silica Cloth Phenolic Primer Chopped Silica Cloth Sealant Adhesive Propellant Initiator Chamber Liner Coating Primer Clear Coating		

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TABLE 7.3-2 HARDWARE TEST MATRIX - IGNITER ASSEMBLY

HARDWARE DESCRIPTION	PART NUMBER	MIG	DM9	QM6	QM7	PV1	<b>QM8</b>	FLT 1	FLT 2	FLT 3	CURRENT FLIGHTS
Igniter Assembly	1075166-02		х	x	x	х	X				
Igniter Assembly	1075164-01	x						Х	Х		
Igniter Assembly	1075164-08	- 1	İ							х	11-13
Chamber Assembly	1075163-01	x	x	x	x	X	X	X	X	X	11-13
Loaded Initiator Chamber Assy	1050152-07	х	х	x	X	Х	Х	X	X	Х	11-13
Adapter Assembly Insulated	1050150-15	- 1	Χ.	x	X	x	X			1	
Adapter Assembly Insulated	1050150-16	- 1						X	Х	X	11-13
Adapter Assembly Insulated	1075698-01	x									

MIQ = MODIFIED IGNITER QUALIFICATION

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### PROPELLANT

The segment propellant (TP-H1148IV) and igniter propellant (TP-H1178) for flight 13 are the same as presented in the flight 12 COQ (Ref. TWR-18764/12). The following tables contain the current flight configuration and qualification criteria.

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TABLE 7.4-1 END ITEM PARTS LIST - PROPELLANT

TOP LEVEL PART NUMBER	PART DESCRIPTION	REV	ECO	
STW5-2833	TP-H1178, Propellant, Igniter	D	10	
STW5-3343 Type IV	TP-H1148IV, Propellant, Case	A	8	

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### TABLE 7.4-2 HARDWARE TEST MATRIX - PROPELLANT

HARDWARE DESCRIPTION	PART NUMBER	DM9	QM6	QM7	PV1	<b>3MP</b>	FLT 1	FLT 2		CURRENT FLIGHTS
Propellant	TP-H1148IV	x	x	x	x	x	x	x	x	13

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7.4-3	ROCKET BOOSTER MOTOR	IFICATION MATRIX	PELLANT
TABLE 7.4-3	REDESIGNED SOLID ROCKET BOOSTER MOTOR	HARDWARE CERTIFICATION MATRIX	PROPELLANT

REVISION \_

3.2.1 Performance 3.2.1a Altitude 3.2.1.1.1 Ignition Characteristics 5.2.1.1.1.1 Ignition Interval 7.2.1.1.1.1 Pressure Rise Rate 7.2.1.1.1.2 Pressure Rise Rate 7.2.1.1.1.2 Fest Fest	Tup. 15723: Vol. V. A0V-8.0		
	200		
		TWR-16940	Closed
	TuR-15723:	TWR-16940	Closed
Ü	•	TWR-17591	Closed
	TWR-15723: Vol. 11.	TWR-17372	Closed
	TWR-15273: Vol. 11.	TWR-17373	Closed
	TWR-15723: Vot. 11.	TWR-17272	Closed
	TWR-15723: Vol. 11.	TUR-17591	Closed
Test	TWR-15723: Vol. 11.	TWR-17372	Closed
	TUR-15723: Vol. 11.	TWR-17373	Closed
Test	TUR-15723: Vol. 11,	TUR-17272	Closed
3.2.1.1.2.1 Wominal Thrust-Time Curve Anal	TUR-15723: Vol. V, A	TWR-16940	Closed
	TWR-15723: Vol. 11,	TWR-17591	Closed
Test	TWR-15723: Vol. 11,	TWR-17372	Closed
Test	TUR-15723: Vol. 11,	TWR-17373	Closed
Test	TWR-15723: Vol. 11,	TUR-17272	Closed
3.2.1.1.2.2 Performance Tolerance & Anal	TWR-15723: Vol. V, AOV-8.0	TWR-16592, TWR-:16940	Closed
Test	TWR-15723: Vol. 11. TGX-6.0	TWR-17591	Closed
Test	TWR-15723: Vol. 11.	TWR-17372	Closed
Test	TWR-15723: Vol. 11,	TWR-17373	Closed
Test	TWR-15723: Vol. 11. TGX-12.0	TWR-17272	Closed
Anal	TWR-15723: Vol. 11,	TWR-16940	Closed
Test	TWR-15723: Vol.	STU7-3344	Closed
3.2.1.1.2.3 Thrust Differential Anal	N/R	TWR-14415	Closed
Anal	, M/R	TWR-18371	Closed
	TWR-15723: Vol. V,	TWR-16940	Closed
3.2.1.1.2.4 impulse Gates Anal	TWR-15723: Vol. V, A	TWR-16940	Closed
Test	TWR-15723: Vol. 11,	TWR-17591	Closed
Test	TWR-15723: Vol. 11,	TWR-17372	Closed
Test	TUR-15723: Vol. 11,	TWR-17373	Closed
	TWR-15723: Vot. 11,		Closed
3.2.1./ Propellants Test	TUR-15/23: Vol.	TWR-16961, TWR-18011 Sup. B, TWR-17057	Closed
Test	TWR-15723: Vol.	TWR-17941	Closed
Test	TWR-15723: Vol.	TWR-17872	Closed
Test	TWR-15723: Vol.	TuR-16106	Closed
Test	TUR-15723: Vol.	STU7-3344, Mgt. Procedure: 2630-33-00007	Closed
3.2.2 Physical x			
3.2.2.2 Mass Properties x			
	TWR-15723: Vol. 11,	TWR-10211-95	closed
Test	TWR-15723: Vol. 11,	THR-17372	Closed
Test	TMR-15723: Vol.	Tur. 17591	Closed

"CS" Indicates reference to a closure statement provided by the cognizant engineer that states compliance or rationale to satisfy the requirement for this flight.

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		TABLE 7.4-3 REDESIGNED SOLID ROCKET BOOSTER MOTOR HARDWARE CERTIFICATION MATRIX PROPELLANT		
REQUIREMENT	METHOD	IMPLEMENTING		EVIDENCING
	ANAL	TWR-15723: VOL. 11, AGV-8.0	TWR-17358.	. TUR-17359
3.2.5 Operational Availability	×			
	Siml	٠ او	TWR-18233	
	Anal	TWR-15723: Vol. V, AOV-4.0	TWR-16961,	
	Test	TuR-17721	TUR-17039,	, RDU-0569R2
	lest Test	198-17720 TUR-15723: Vol. 11. TGX-20.0	TUR-16961.	
3.2.7 Environment				
3.2.7.1 Natural Environment	Anal	M/R	TWR-17009	
3.2.7.1a. Prelaunch	×			
3.2.7.1a.1 Solar Radiation	Anal	Vol. V,	TWR-17009	
3.2.7.1a.2. Air Temperature	Anal	-15723:	Tur-17009	
• • • • • • • • • • • • • • • • • • • •	Anal		TWR-17525	
3.2.7.1a.3 Wind	Anal	\oldo	TWR-17009	
3.2.7.1a.4 Humidity	Anal		R04-0603	
3.2.7.1a.6 Salt air	Sim		TWR-18617,	, TWR-18253
3.2.7.1a.7 Ozone	Anal	TUR-15/23: Vol.V, AOH-1.0	14R-18617	
3.2.7.2 Induced Environment	Anal	N/R	TWR-1/009	
5.2.7.2.1 Inermal	× 3		T. 1000	
3.2.7.2.1a. Pretaunch		E/R	100 11 - XM	
5.2.9 Storage	×	:	40027	
5.2.9.1 Post Acceptance Requirements	JE S	TMR-15/23: VOL. V, ADM-1.U TMR-15/23: VOL. II. 1GA-97.0	IMK-10233 RDM-0569R2	Α.
3.3.1.1 Selection of Materials, Parts	dsu	, 0	CS 04-05	•
and Processes	-			
	Test	TWR-15723: Vol. 11, SOX-1.0	TWR-18011 Supp.	Supp. B
3.3.6 Mechanical	×			
3.3.6.1 Design Safety Factors	×			
3.3.6.1.1 Structural SF	Anal	TWR-15723: Vol. V, AOV-4.0	TMR-16961	
3.3.6.1.1.2 Bond Safety Factors	<u> </u>	T. 16. 16.727 . Vol. V. 4001-1 0	TILD. 18277	POUL-0577802
יייייייייייייייייייייייייייייייייייייי	2	011 MOV 1 100 107101 - WHI	700	
/ Liner bond	Anal	TMR-15723: Vol. V. AOV-4.0	TWR-17039	
	4	8/N	TUR-18011	S.C
	¥ ¥	TUR-15723: Vol. V. AOV-5.0	TWR-16961	
	Asi		TWR-17057,	
3.3.6.2 Allowable Mechanical Properties	Sim	TWR-15723: Vol. V. AOM-1.0	TWR-18233,	
	Anal	۰ اور	TWR-16961,	, TWR-17057, RDM-0573R2
	Anal		TJR-16961	
	Test	Vol.	TWR-16961,	, TWR-18011 Supp.B
	Insp	Vol. 11,	CS 04-05	
3.3.8.3 Flammability, Odor and	dsu	TWR-15723: Vol. 11, IGA-385.0	cs 04-06	

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3.3.8 Materials 3.3.8.3 Flammability, Odor and Offgassing

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EVIDENCING

CS 04-05 RDW-0551R2

TABLE 7:4-3
REDESIGNED SOLID ROCKET BOOSTER MOTOR
HARDWARE CERTIFICATION MATRIX
PROPELLANT

TWR-15723: Vol. II, IGA-538.0 TWR-16564

IMPLEMENTING

Insp Insp

METHOD

3.3.8.3 Moisture and Fungus Resistance 3.3.9 Contamination Control

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REQUIREMENT

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#### 7.5 LINER

The liner (STW5-3224) flight configuration and qualification criteria for flight 13 is identical to that presented in flight 12 COQ (Ref. TWR-19764/12). The following tables shows the current as built configuration and qualification criteria.

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# TABLE 7.5-1 END ITEM PARTS LIST - LINER

TOP LEVEL PART NUMBER	PART DESCRIPTION	REV	ECO
STW5-3224	Liner, SRM, Space Shuttle Project	N/C	5

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# TABLE 7.5-2 HARDWARE TEST MATRIX - LINER

HARDWARE DESCRIPTION	PART NUMBER	DM9	QM6	QM7	PV1	8MP	FLT 1	FLT 2		CURRENT FLIGHTS
Liner	STW5-3224	x	x	x	x	x	x	x	X	13

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### 7.6 INTERNAL INSULATION

The internal insulation for flight 13 is the same as presented in flight 11 COQ (Ref. TWR-18764/11). The following reflects the current as built configuration and certification criteria.

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TABLE 7.6-1 END ITEM PARTS LIST - INTERNAL INSULATION

TOP LEVEL PART NUMBER	PART DESCRIPTION	REV	ECO
H/A			

SUB LEVEL PART N	UMBER PART DESCRIPTION	REV	ECO
STU4-2531	Extrusion Inhibitor Filler	В	15
STW4-2535	Insulation, Dome Filler Extrusion	В	15
STW4-2545	Insulation	A	13
STU4-2621	Insulation (NBR)	G	31
STW4-2868	Insulation (Carbon Fiber EPDM)	E	18
STW4-3442	Extrusion, J-seal Tang (NBR)	N/C	3
STW4-3443	Extrusion, J-seal Clevis (NBR)	N/C	4
STW5-2664	Adhesive Primer	8	10
STV5-2712	Adhesive	8	7
STW5-2798	Adhesive	A	5
STW5-3223	Inhibitor	N/C	1

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### TABLE 7.6-2 HARDWARE TEST MATRIX - INTERNAL INSULATION

HARDWARE DESCRIPTION	PART NUMBER	DM9	QM6	OM7	PV1	SMP	FLT 1	FLT 2	FLT 3	CURRENT FLIGHTS
Dome Filler Extr	STW4-2535	х	x	x	х	x	X	x	х	10-13
NBR Insulation	STW4-2621	Х	X	X	X	X	X	X	Х	10-13
Extr, Fwd Inhib	STW4-2531	X	X	X	X	X	X	X	X	10-13
CFF/EPDM Insul	STW4-2868	x	X	X	X	X	X	X	X	10-13
Castable Inhib	STW5-3223	X	X	X	X	X	X	X	X	10-13
NBR Inhibitor	STW4 - 2545	х	X	X	X	X	X	X	Х	10-13
Extr. J-seal Tang (NBR)	STW4-3442		X	X	X	Х	X	X	X	10-13
Extr, J-seal Clevis	STW4-3443		X	X	X	X	X	X	X	10-13
Adhesive Primer	STW5-2664	X	X	X	X	X	X	X	X	10-13
Adhesive	STW5-2712	X	x	X	X	X	X	X	X	10-13
Adhesive	STW5-2798	X	x	X	X	X	X	X	X	10-13

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### 7.7 THERMAL PROTECTION SYSTEM

The thermal protection system (TPS) for flight 13 is the same as presented in the flight 5 COQ (Ref. TWR-18764/05). The following tables contain the current flight configuration and qualification criteria.

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TABLE 7.7-1 END ITEM PARTS LIST - THERMAL PROTECTION SYSTEM

TOP LEVEL PART NUMBER	PART DESCRIPTION	REV	ECO
n/A			

SUB LEVEL PART NUMBER	PART DESCRIPTION	REV	ECO
STW4-2528	T-ring Cap Extrusion	A	12
STW4-2529	Insulation, EPDM	A	11
STW4-2536	EPDM Thermal Insulation	A	11
STW4-2700	Cork Insulation	D	20
STU4-3174	Thermal Extrusion Insulation	A	9
STW4-3218	Adhesive	A	3
STW4-3299	Hatband Joint Extrusion	A	8
STW5-2664	Primer	В	10
STW5-2798	Adhesive	A	5
STW5-2811	Adhesive	D	13
STW5-2975	Potting Compound	N/C	4
STW5-2994	Coating	N/C	3
STW5-3183	Ablation Compound	N/C	3
STW5-3225	Coating	В	5
STW5-3226	Primer	В	3

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TABLE 7.7-2 HARDWARE TEST MATRIX - THERMAL PROTECTION SYSTEM

HARDWARE DESCRIPTION	PART NUMBER	DM9	QM6	QM7	PV1	SMP	FLT 1	FLT 2	FLT 3	CURRENT FLIGHTS
Cork Insulation	STW4-2700	х	x	x	x	x	x	x	x	11-13
K5NA Ablation Compound	STW5-3183	X	X	X	X	X	X	X	X	11-13
Thermal Extrusion Insul	STW4-3174	- 1	X	x		X	X	Х	X	11-13
EPDM	STW4-2536	x	X	x	x	x	X	X	X	11-13
T-Ring Cap Extrusion	STW4-2528		Х	x		X	X	X	X	11-13
Potting Compound	STW5-2975	x	X	X	x	x	X	x	x	11-13
EPDM Insulation	STU4-2529		X	X	x	x	X	x	x	11-13
EPDM Extrusion	STW4-2530		X	X	x		X	X	x	
Insul., Extruded Cork	1U82836-01	×	x	x	"	x	X	X	X	
Adhesive	STW4-3218	x	X.	X	x	X	X	X	x	11-13
Primer	STW5-3226	x	X	x	x	X	X	x	Ιχ .	11-13
Coating	STW5-2994	Î	x	x	x	X	X	X	X	11-13
Primer	STW5-2664	Î	x	Îx	x	x	x	x x	X	11-13
Adhesive	STW5-2798	Î	x	x	x	x	x	x	x	11-13
Coating	STW5-3225	lîx 💮	x	Î	x	x	x	x	x	11-13
	STW5-2811	î	x	x	x	x	x	x x	Î	11-13
Adhesive, Epoxy EPDM Hatband Extr STW4-3299	TY.I	lî.	x	x	x	Îx	x	Îx 💮	Î	11-13
<del></del>	TY.11	î	x	î	x	x	x x	Îx 💮	Î	11-13
EPDM Hatband Extr STW4-3299			x	x	x	x	Î.	Î	î	11-13
EPDM Hatband Extr STW4-3299	TY.III	X	<b>X</b>	<del>*</del>	Ι*	<b>*</b>	^	^	^	' ' ' ' ' '



# 7.8 SYSTEMS TUNNEL

The systems tunnel assemblies used on flight 13 are the same design configuration as those of flight 12. See TWR-18764/09 for certification data.

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TABLE 7.8-1 END ITEM PARTS LIST - SYSTEMS TUNNEL

TOP LEVEL PART NUMBE	PART DESCRIPTION	REV	ECC
1u75243-07	Tunnel Assy, Forward Segment	С	23
1075244-06	Tunnel Assy, Center Segment Fwd.	C	21
1075246-09	Tunnel Assy, Aft Segment	C	20
1075246-10	Tunnel Assy, Aft Segment	C	20
1075813-06	Tunnel Assy, Center Segment Aft	C	24
1076803-03	RSRM Assy and Closeout-KSC	В	22

SUB LEV	EL PART	NUMBER PA	RT	DESCRIPTION	RH USE	LH USE
10182-0	276-103	Flo	or	Assembly (GFE)		
10182-0	276-104			Assembly (GFE) Alt.		
10182-0				Assembly (GFE)		1
10182-0				Assembly (GFE) Alt.		
10182-0				Assembly (GFE)		
10182-0				Assembly (GFE)	1	
10182-0				Assembly (GFE) Alt.	1	1
10182-0				Assembly (GFE)		1
10182-0				Assembly (GFE) Alt.	1	
10182-0				Assembly (GFE)		1
10182-0				Assembly (GFE) Alt.	1	
10182-0				Assembly (GFE)	1	1
10182-0				Assembly (GFE) Alt.		
	282-102 282-107			Assembly (GFE)		
	282-103 283-103			Assembly (GFE) Alt. Assembly (GFE)	1	
10182-0		1		Assembly (GFE) Alt.	1	1
10182-0	-			Assembly (GFE)		
	284 - 103			Assembly (GFE) Alt.		
10182-0	_			Assembly (GFE)		1
	285 - 103			Assembly (GFE) Alt.		İ
10182-0				Assembly (GFE)		
10182-0				Assembly (GFE) Alt.		
	297-103			Assembly (GFE)		l
	297-104			Assembly (GFE) Alt.	1	1
	298-103			Assembly (GFE)		
	298-104			Assembly (GFE) Alt.	1	
	299-103			Assembly (GFE)	1	
	299-104			Assembly (GFE) Alt.		
	300-103			Assembly (GFE)	1	1
10182-0	300-104			Assembly (GFE) Alt.		
10182-0	302-103			Assembly (GFE)	İ	1
10182-0	302-104	Flo	or	Assembly (GFE) Alt.	1	1
10182-0	302-104	Flo	or	Assembly (GFE) Alt.		
10182-0	303-103	Flo	or	Assembly (GFE)		1
10182-0	303-104	Flo	or	Assembly (GFE) Alt.		1
10182-0	304 - 103			Assembly (GFE)		
	304 - 104			Assembly (GFE) Alt.	1	
	305 - 102	Flo	ОГ	Assembly (GFE)	1	1
	305 - 103			Assembly (GFE) Alt.		
	327-103			Assembly (GFE)	1	l
	327-104	1		Assembly (GFE) Alt.	1	1
	328-102	1		Assembly (GFE)	1	1
	328-103			Assembly (GFE) Alt.		
	411-101	1		Assembly (GFE)		
	411-102			Assembly (GFE) Alt.		
	414-101	1		Assembly (GFE)	1	
	414-102			Assembly (GFE) Alt.	1	1
10182-0	415-101	flo	or	Assembly (GFE)	1	

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SUB LEVEL PART NUMBER	PART DESCRIPTION	RH USE	L H USE
10182-0415-102	Floor Assembly (GFE) Alt.		
10182-0416-101	Floor Assembly (GFE)		
10182-0416-102	Floor Assembly (GFE) Alt.	l	
1051864-01	Plate		
1082841-05	Splice Plate Assembly		
1082841-07	Splice Plate Assembly		
1082841-08	Splice Plate Assembly		
1082841-11	Splice Plate Assembly		
1082847-01	Floor Plate Assembly		
1082847-02	Floor Plate Assembly		
1082847-03	Floor Plate Assembly		
1082847-04	Floor Plate Assembly		
1082847-05	Floor Plate Assembly		
1082847-06	Floor Plate Assembly	1	l
1082847-07	Floor Plate Assembly		İ
1U82847-08	Floor Plate Assembly		
1U82847-09	Floor Plate Assembly		
1082847-10	Floor Plate Assembly		
1U82847-11	Floor Plate Assembly		
1082847-12	Floor Plate Assembly		
1082847-13	Floor Plate Assembly		
1U82847-14	Floor Plate Assembly		
1U82847-15	Floor Plate Assembly		
1u82847-16	Floor Plate Assembly	l l	
1U82847-17	Floor Plate Assembly		
1U82847-18	Floor Plate Assembly	1	
1U82847-19	Floor Plate Assembly		l
AN960C416L	Washer, Flat		
MIL-C-5541, CL. 1a	Chemical Coating		l
MIL-S-8802, CL b2	Sealing Compound	1	
MS35307-305	Screw	1	
NAS1352N4-10	Screw, Cap, Sockethead		
NAS1352N4-14	Screw, Cap, Sockethead		
NAS1587-4C	Washer		İ
NAS1587-4L	Washer, Plain		
STW4-2736	Insulation		
STW4-2730 STW4-2874	Conductive Adhesive		l
STU4-2955	Dry Lubricant	1 .	
	Adhesive		1
STW4-3218	1		
STW5-2664	Primer, Adhesive		
STW5-2798	Adhesive		l
STW5-2914	Primer Coating		l
STW5-3215	Adhesive Primer	'	l
STW5-3225, TY. I	Top Coat	1	l
STW5-3226	Primer		l
Z-4140	Gronmet		l
2-4144	Grommet		
2x-4306	Grommet		l

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TABLE 7.8-2 HARDWARE TEST MATRIX - SYSTEMS TUNNEL

HARDWARE DESCRIPTION	PART NUMBER	DM9	QM6	QM7	PV1	SMP	FLT 1	FLT 2	FLT 3	CURRENT FLIGHTS
Tunnel Assy, Fud Seg (Alum)	1075243-01						x			
Tunnel Assy, Fwd Seg (Alum)	1075243-02	İ						x		
Tunnel Assy, Fud Seg (Alum)	1U75243-03	ļ			ŀ	ļ.			X	
Tunnel Assy, Fwd Seg (Alum)	1075243-07	-				ŀ				13
Tunnel Assy, Ctr Seg Fwd	1075244-01		1				х	1		
Tunnel Assy, Ctr Seg Fwd	1075244-02	1	ļ					x		
Tunnel Assy, Ctr Seg Fwd	1075244-03								x	
Tunnel Assy, Ctr Seg Fwd	1075244-06									13
Tunnel Assy, Ctr Seg Aft	1u75813-01		l				x			
Tunnel Assy, Ctr Seg Aft	1U75813-02							x		
Tunnel Assy, Ctr Seg Aft	1075813-03		ļ						x	
Tunnel Assy, Ctr Seg Aft	1075813-06		ŀ				1			13
Tunnel Assy, Aft Segment	1075246-01		ļ		1		x			
Tunnel Assy, Aft Seg	1075246-02							x		
Tunnel Assy, Aft Seg	1075246-03							×	×	
Tunnel Assy, Aft Seg	1075246-09		1					-		13
Tunnel Assy, Aft Seg	1U75246-10					1			1	13
Tunnel Assy, Fwd (Alum)	1076138-01			x				ļ	1	1
Tunnel Assy, Fwd Ctr (Alum)	1076139-100			x						
Tunnel Assy, Aft Ctr (Alum)	1075843-01			x	]	1			l	
Tunnel Assy, Segment (Alum)	1075845-01			х	l	1				
Tunnel Assy, Aft Ctr Segment	1082848-01	- 1						1	1	
Tunnel Assy, Ctr Seg (Alum)	1075426-02	x			1					
Tunnel Assy, Fwd (Alum)	1076138-02					x		l	l	
Tunnel Assy, Fwd Ctr (Alum)	1076139-02	- 1		1	1	x			1	
Tunnel Assy, Aft Ctr (Alum)	1075843-02	l				х		1	1	l
Adhesive Primer	STW5-3215	x		x		x	x	x	x	13
RSRM Assy and closeout-KSC	1076803			1			1	1		13



#### 7.9 Nozzle

The 1U52861-12 nozzle assembly installed on flights 11 thru 13 is identical to those used on flight sets 6 thru 10. Deviation RDW-0528R4, which addressed reusable components and limited effectivity to flight 10, was replaced by RDW-0528R5 with an effectivity thru flight 13. This deviation also applies to the flex bearing and aft exit cone. The Nozzle Assembly COQ was previously submitted and certified for use through flight 13.

### Flex Bearing

The 1U52840-03, that is made from the 1U51060 flex bearing, or the 1U52840-01 flex bearing is the basic configuration used for certification and is the same as the 1U52840-10. The difference in dash number is due to the instrumentation added to the -10 bearing. The 1U52840-10 bearing was previously used on flights 4 thru 10. The Flex Bearing was previously submitted for flight 8 and was subsequently certified for use through flight 13.

#### Aft Exit Cone

The aft exit cone assembly 1U76039-12,-13 is the same configuration as was used on flight 9 and 10. Testing to extend the storage life of Linear Shaped Charge(LSC) on the nozzle severance system has been completed and the age requirements satisfied. The Aft Exit Cone Assembly COQ was submitted and subsequently certified for use through flight 13.



TABLE 7.9-1 END ITEM PARTS LIST - FORWARD NOZZLE ASSEMBLY

TOP LEVEL PART NUMBER	PART DESCRIPTION	REV	ECO
1052861-12	Nozzle Assembly	D	32

SUB LEVEL PART NUMBER	PART DESCRIPTION	RH USE	LH USE
1050159-02	Plug		
1050228-25	Packing		
1050568-01	Throat Assembly		
1050568-02	Throat Ring		
1050568-03	Inlet Ring		
1050568-11	Throat-Inlet Assy Nozzle		
1051058-01	Cable, Lightning Bypass, Nozzle		
1051061-02	Snubber Segment, Nozzle	İ	1
1051061-04	Snubber Segment, Nozzle		
1051063-03	Ring, Snubber Support		
1051064-02	Shim	1	1 1
1051065-02	Shim		
1051066-02	Retainer, Axial Shim	2	1
1051130-05	Ring, Inner		
1051130-06	Ring, Outer		
1051130-09	Bearing Protector	i	
1051173-10	Cowl, Boot & Housing Assembly	1	
1051174-11	Housing and Boot Assy	1	
1051369-02	Washer	1	
1051916-16	Lubricant		
1052837-01	Exit Cone Housing	1	1
1052838-03,-01	Hsg Assy, Cowl	1	
1052839-01	Exit Cone Assembly		
1052839-02	Exit Cone		
1052840-10	Flex Brg Assy		
1052855-12	Nose-Throat Assy, Nozzle		
1052856-11	Nose-Throat-Brg Assy		
1U52857-10	Nose-Throat-Brg-Cowl Assy		
1052858-13	Nose-Throat-Brg-Cowl-Hsg Assy		
1052862-02	Insulation		
1052862-09	Housing Assembly	l	
1052863-01	Nose-Inlet Assembly	l	
1052863-02	Nose Cap		
1052863-03	Nose-Ring, Fwd		
1052863-04	Inlet Ring-Aft		
1052867-01	Plug		
1052945-02,-04	Fixed Housing	ŀ	
1075150-01	Packing, Preformed	1	
1075150-02	Packing, Preformed		
1075150-05	Packing		
1075150-06	Packing		
1u75150-07	Packing		
1075150-08	Packing		
1075150-09	Packing	1	
1075150-10	Packing		
1075374-01	Packing with Retainer		1
1075398-01	Housing		
1075545-01	Cowl, Flexible Boot	1	
1075546-01	Boot, Flexible Bearing		
1075546-02	Ring, Inner		
1075546-03	Ring, Outer	İ	
1075547-01	Housing, Throat, Support, Nozzle	1	
1075756-01	Screw		
1075756-03	Screw	1	1

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SUB LEVEL PART NUMBER	PART DESCRIPTION	RH USE	LH
1u75756-04	Screw		
1075756-05	Screw	l	
1075756-06	Screw	1	İ
1075756-07	Screw		
1075756-09	Screw		
1075756-10	Screw		
1076065-03	Screw		
1u76065-04	Screw		
1u76385-01	Screw		l
AN960-1016L	Vasher	İ	
N960-416	Washer		l
AN960-416L	Washer		ļ.
NYP37	Screw		
L-P-523, TY II, CL.I	Film. FEP		l
MIL-A-46106, TY I	Primer		
MIL-C-5541, CL. 1A	Coating		1
MIL-1-23594, TY I	Teflon Tape	1	
MIL-R-9299	Phenolic Resin	I	
MIL-8-46050,TY I CL 2		I	1
MIL-S-8802, CL B-2	Sealant	1	1
MS124700	Insert	İ	1
MS124736	Helicoil		
MS16562-77, 265	Pin Spring		
MS3367-2-9	Tie Down Strap		
STW4-2621	Insulation		
STW4-2871	Carbon Fabric	I	
STW4-2874	Conductive Adhesive	1	ł
•	Protective Coating	1	1
STW4-2951	Adhesive		
STW4-3218			
STW5-2650	Insulation Compound		
STW5-2651	Insulator Adhesive	- 1	
STW5-2665		1	
STW5-2723	Adhesive, Silicone Rubber		
STW5-2725	Primer, Silicone Rubber		
STW5-2738	Silicone Rubber	1	
STW5-2788	Paint, Silk Screen		
STW5-2813	Sealing Compound		
STW5-2830	Adhesive		
STW5-2914	Primer		
STW5-2922	Coating		1
STW5-2931	Adhesive		
STW5-2936	Primer		
STW5-2942	Lubricant		1
STW5-3225, TY I	Coating		
STW5-3226	Primer		
STW5-3279	Carbon Cloth Phenolic		1
STW5-3292, TY II	Adhesive		1
STW5-3621 TY II	Glass Phenolic	1	
STW5-3621, TY III	Carbon Cloth Phenolic Tape		1
STW7-2865 TY I	Thermal Insulation Compound		
TT-P-1757, TY I,CL.Y	Primer	- 1	1

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TABLE 7.9-2 END ITEM PARTS LIST - FLEX BEARING

TOP LEVEL PART NUMBER	PART DESCRIPTION	REV	ECO
1052840-10	Bearing Assy	D	29

SUB LEVEL PART NUMBER	PART DESCRIPTION	RH USE	LH USE
1U50097-01	Shim		
1050097-02	Shim		
1050097-03	Shim		
1050097-04	Shim		
1U50097-05	Shim		
1050097-06	Shim		
1050097-07	Shim		l
1050097-08	Shim		1
1050097-09	Shim		1
1050097-10	Shim		
1052833-01	Aft End Ring		1
1052834-01	Fwd End Ring		l
1052840-01	Bearing Assembly		
1U52840-02	Bearing Assembly		
STW5-2656	Adhesive Primer		
STW5-2657	Adhesive		
STW5-2664	Primer, Adhesive		İ
STW5-2665	Adhesive		
STW5-2782	Rubber, Tycement		l
STW5-2783	Cement, Natural Rbr Base		
STW5-2943	Natural Rubber		
STW5-3225, Ty.I	Coating Epoxy		
STW5-3226	Primer Epoxy		1

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TABLE 7.9-3 END ITEM PARTS LIST - AFT EXIT CONE

TOP LEVEL PART NUMBER	PART DESCRIPTION	REV	ECO
1U76039-12	Exit Cone Assembly, L.H.	A	16
1076039-13	Exit Cone Assembly, R.H.	^	16

SUB LEVEL PART NUMBER	PART DESCRIPTION	RH USE	LH
1050510-10	Screw, Cap, Sockethead		
1050510-11	Screw, Cap, Sockethead	l	
1050510-12	Screw, Cap, Sockethead	l	
1050767-01	Base, Cable Minting		
1050771-01	Insulator, Cork		
1051139-01	Spacer, Plate	l	
1051242-05	Bracket, Nozzle Actuator	1	1
1051243-02	Shell, Exit Cone Aft		
1051245-01	Clamp, Loop		
1051246-01	Strap, Retaining		
1051301-02	Retainer		,
1051373-01	Tube Explos Lead		
1051406-01	Standoff Blast Shield		
1051406-07	Standoff Blast Shield		
1051406-08	Standoff Blast Shield		
1051407-03	Flap, Blast Shield		
1051805-01	Insulator Retainer		
1051839-04	Spacer Blast Shield		
1051873-01	Wiring Harness		
1051937-01	Shim, Compliance Ring		
1052242-01	Ring, Compliance, Nozzle	1	1
1052288-04	Ferrule, Crimp		
1u52290-02	Cable, Nozzle Severance		
1052302-01	Blast Shield		
1052305-01	Tube Ordinance Cable		
1u52307-02	Clamp, Initiator		
1052308-01	Nut		
1052353-01	Protective Cover		
1052354-01	Bracket, Cable		
1052354-02	Bracket, Cable		
1052371-01	Adapter Assembly		
1052372-01	Adapter Assembly		
1052641-01	Retainer		
1052700-01	Ring Segment, Nozzle Assembly		
1052700-02	Ring Segment, Nozzle Assembly		
1052700-03	Ring Segment, Nozzle Assembly		
1052842-01	Shell, Exit Cone, Aft		١.
1052842-03	Shell, Exit Cone, Aft	1	1
1075691-01,06,07,10	HLCAL Col Oversize Insert	l	
1075692-01,05,06,07	HLCAL Col Twinsert	l	
1075692-11,15,16,17	HLCAL Col Twinsert		
1075739-01	Exit Cone GEI Harness	ļ	
1075740-01	Exit Cone GEI Harness		
1076065-04	Screw, Cap, Sockethead	1	
1076121-15,-16	Exit Cone Subassembly		į
1076123-01	Aft Exit Cone Assembly		
1076123-02	Aft Exit Cone Liner		
1076123-03	Metal Assembly	1	
1076861-01	Exit Cone GEI Harness		
38030-6F-20D	Screw Button Head		
38030E-4F-8D	Screw, Button Head		
38031-96C-8  78176-10-26	Screw, Button HD Capm		
	Bolt	1	1

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SUB LEVEL PART NUMBER	PART DESCRIPTION	RH USE	LH
79095-10-14	Bolt		
83-362533	Marker, Cable		
AN960XC816	Washer		
L-T-80	Tape, Al Foil		
M23053/5-305-9	Insulation Sleeving		
M23053/5-308-9	Sleeve, Heat Reactive		
MIL-A-46050, TY1 CL.2	Adhesive	l	
MIL-C-5541, CL.1A	Alodine Coating		
MIL-R-9299	Resin, Phenolic, Laminate		ŀ
MIL-S-22473, GR.H	Seating Compound	ļ	
MIL-S-46163, TY.2 GRM	Locking Compound		
MIL-S-8802, CL.B-2	Sealant	l	
MS122087	Insert		
MS124696	Insert	ĺ	
MS124696	Insert		
MS124700	Insert		
MS20995C20	Safety Wire	l	1
MS21209-F1015	Insert		
MS21980-187	Ferrule, Outer		l
MS21981-109	Ferrule, Inner		ł
MS27473E12F35P	Connector Plug		
MS3367-1-9	Strap, Tie Down		
MS3367-2-2	Strap, Tie Down	1	
MS9881-14	Nut	i	
MSFC-SPEC-222,T	Potting Compound		
NAJ6C12-3P	Connector, Strength Plug		l
NBS9GE8-2SE	Connector, Strength Plug		
MJ-122	Jiffy Connector		l
NLS-GSP-22D	Plug, Sealing Grommet		l
NLS-S-12	Backshell Stn Relief		l
QQ343S22S1T	Copper Wire		1
SEB26100094-201	Detonator		1
SN60H063RAP3	Solder		
STW3-3134	Tubing, Polyurethane		
STW3-3137, TY.3	Cable, Electrical, Double	1	1
STW4-2601	Epoxy Resin	ļ	1
STW4-2636	Floats Pulp		1
STW4-2679	Silicon Dioxide	1	1
STW4-2679	Silicon Dioxide	1	
STW4-2680	Curing Agent	1	ı
STW4-2736	EPDM, Shilica Filled	1	l
STW4-2919	Nylon Thread	1	1
STW4-3218	High Temp Adhesive		
STW5-2651	Cone Structure, Glass Cl.	i	
STW5-2678	Sealant	1	1
STW5-2788	Marking Enamel, Black		
STW5-2811	Adhesive		
STW5-2835	Potting Compound		1
STW5-2878	Epoxy Adhesive		1
STW5-2898	Adhesive		1
STW5-2914	Primer		1
STW5-2922	Bostik Coating	1	1
STW5-2931	Adhesive	1	1
STW5-2942	O-ring Lubricant		
STW5-2975	Potting Compound	1	1
STW5-2976	Flexible Adhesive		1
STW5-2994	Coating	1	1
STW5-3135	Molding Compound, Pol	1	
STW5-3136	Foam, Urethane		1
STW5-3183	Ablation Compound	į.	1

1.



SUB LEVEL PART NUMBER	PART DESCRIPTION	RH USE	LH USE
	Adhesive Primer Sealant, Polysulfide Carbon CLoth Phenolic Adhesive, Epoxy Carbon Cloth Primer, Zinc Coating Wire, White Cable, Shielded		

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TABLE 7.9-4 HARDWARE TEST MATRIX - FORWARD NOZZLE ASSEMBLY

HARDWARE DESCRIPTION	PART NUMBER	DM9	QM6	QM7	PV1	8MP	FLT 1	FLT 2		CURRENT FLIGHTS
Nozzle Assembly	1052861-03	x								
Nozzle Assembly	1052861-101	-	X	l						
Nozzle Assembly	1052861-09	- 1		X					1	
Nozzle Assembly	7076362-01				X					
Nozzle Assembly	1052861-10	- 1		1		X	1			
Nozzie Assembly	1052861-100			1			Х			
Nozzle Assembly	1052861-04	- 1						X	Х	ŀ
Nozzle Assembly	1052861-12	1		1						11-13



# TABLE 7.9-5 HARDWARE TEST MATRIX - FLEX BEARING ASSEMBLY

HARDWARE DESCRIPTION	PART NUMBER	DM9	QM6	QM7	PV1	8MD	FLT 1	FLT 2	FLT 3	CURRENT FL I GHTS
flex Bearing	1U76637-01 1U52840-04 1U52840-06 1U52840-07 1U52840-08 1U52840-09 1U52840-10	x	X	×	x	x	x	x	x	8 - 13

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TABLE 7.9-6 HARDWARE TEST MATRIX - AFT EXIT CONE ASSEMBLY

HARDWARE DESCRIPTION	PART NUMBER	DM9	QM6	QM7	PV1	QM8	FLT 1	FLT 2	FLT 3	CURRENT FLIGHTS
Ring Segment	1052306-01						x			
Ring Segment	1052306-02	İ					X			
Ring Segment	1052700-02	•		х	X			X	X	11-13
Ring Segment	1052700-01			х	X	ļ		Х	X	11-13
Ring Segment	1052700-03			X	X	Х		X	X	11-13
Severance System	1u52290-02			X		X	X	X	X	11-13
Clamp	1051245-01			X		x	X	X	X	11-13
Strap	1051246-01			x		X	Х	X	X	11-13
Screws	38030E-4F-8D	1		Х		X	X	Х	X	11-13
Cable Mounting	1u50767-01			x		X	X	Х	X	11-13
Strap Tie Down	MS3367-1-9			X		X	X	X	X	11-13
Strap Tie Down	MS3367-2-2			X		x	х	X	X	11-13
Adhesive	STW4-3218			X	ļ	x	X	X	X	11-13
Potting Compound	STW5-2975	1	1	X		x	x	x	X	11-13
Sealing Compound	MIL-S-8802	1		х		x	x	X	X	11-13
Detonator	SEB26100094-201			*		*	*	*	*	*
Exit Cone Assy	7u75416-01	x		1				1		
Exit Cone Assy	7u75359-01		x		i					1
Exit Cone Assy	7u75827-01			x	l		İ			
Exit Cone Assy	7075860-04				1	x				1
Exit Cone Assy-LH	1076039-01	1			1		x		1	
Exit Cone Assy-RH	1076039-03	1			1		x			
Exit Cone Assy-LH	1076309-04				1	ĺ		x		
Exit Cone Assy-EN	1076309-05				ı		ļ	X		
Exit Cone Assy-LH	1076309-06	1			1				Х	
Exit Cone Assy-RH	1076309-07			1				1	X	
Exit Cone Assy-LH	1076309-12		1			1		1	"	11-13
Exit Cone Assy-RH	1076309-13	1	1	1						11-13



# 7.10 SAFETY AND ARMING DEVICE

The Safety and Arming devices (S&A) used on flight 13 are identical in configuration and fabrication to those presented on flight 12 COQ. The following data contains the current as-built configuration and qualification criteria.

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TABLE 7.10-1 END ITEM PARTS LIST - SAFE AND ARM DEVICE

TOP LEVEL PART NUMBER	PART DESCRIPTION	REV	ECO
1U52295-04	Safety and Arming Device	C	14
1U76803-03	Assembly and Closeout - KSC	B	22

SUB LEVEL PART NUMBER	PART DESCRIPTION	RH USE	LH USE
1554	Flux		
1050228-18	Packing		
1050228-25	Packing		
1050228-46	Washer		
1050266-02	Arming Monitor Assembly	02	02
1050492-05	Label		
1050600-01	Actuator	1	
1050601-01	Switch Deck Assembly		
1050602-01	Switch Deck Assembly		
1050608-01	Armature Assembly	1	
1050609-01	Housing		
1U50610-01	Gear Housing		
1050611-01	Shaft	ł	
1050612-01	Housing, Motor	1	
1050614-01	Contact, Electrical	1	
1050615-01	Contact, Electrical	1	
1050616-01	Contact, Electrical		
1050617-01	Sleeve	l	]
1050618-01	Arm	İ	1
1050619-01	Switch Deck		l
1050620-01	Contact Support		Į.
1050621-01	Shaft	1	1
1050621-02	Shaft		1
1050621-03	Pin		
1050622-01	Drive Support		
1050623-01	Stop Plate	1	
1050624-01	Arm, Indicator	1	
1050625-01	Retainer	1	
1050626-01	Commutator		
1050627-01	Shaft	1	
1050628-01	Gear		
1050630-01	Plate, Retaining, Bearing		
1050631-01	Lamination	1	
1050632-01	Winding		
1050633-01	Winding		1
1050633-02	Winding		1
1050634-01	Shaft Assembly		
1050635-01	Shaft	1	
1050636-01	Brush Plate Assembly	1	1
1050637-01	Holder, Brush	1	1
1050639-01	Retainer	ŀ	1
1050640-01	Clutch Plate		1
1050641-01	Terminal, Lug		
1050642-01	Shim		
1050642-02	Shim		
1050643-01	Bearing	1	1
1050644-04	Bearing	1	1
1050645-01	Pin		
1050646-01	Insulator		
1050647-01	Spring		
1050648-01	Shim	1	1
1050648-02	Shim	1	1
1050649-01	Bushing	ļ	i

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SUB LEVEL PART NUMBER	PART DESCRIPTION	RH USE	LH USE
1050650-01	Eylet		
1050651-01	Shim		
1050652-01	Washer		
1050654-01	Window		
1050655-01	Insulator		
1050656-01	Commutator		
1050657-01	Bearing, Sleeve		
1050658-01	Wedge   Disk, Clutch		
1U50661-01 1U50664-03	Bearing		
1U50664-04	Bearing		
1050665-01	Gear		
1050665-02	Gear		1
1U50665-04	Gear, Spur		
1050665-05	Pinion	1.	
1050665-06	Pinion		
1050666-01	Retainer, Bearing Molding		
1050667-01	Spring	1	
1050668-01	Plate, Retaining		ŀ
1050669-01	Brush, Electrical Contact		
1050670-01	Contact, Electrical		l
1050671-01	Decal	1	
1050672-01	Screw		
1050673-01	Decal		
1050674-01	Shim		
1050674-02	Shim		
1050674-03	Shim		
1050675-01	Insulator  Shim		
1050676-01	Washer		
1U50677-01 1U50678-01	Bearing		
1050679-01	Insulator		
1050680-02	Shim		
1050681-01	Washer		
1050682-01	Housing		
1050683-01	Plate, Stop		
1050684-01	Plate, Retaining		
1050686-01	Cover		1
1050686-02	Cover		
1050687-01	Washer		
1050688-01	Rotor		
1050688-02	Rotor		
1050691-01	Cover, Booster Assembly	1.	
1050691-02	Cover, Booster		
1050693-01	Spacer, Plate		
1050694-01	Cushion	1	
1050695-01	Connector Assembly	1	
1050697-01	Plate, Rotor		
1050697-02	Plate		l
1U50697-03 1U50788-01	Stop  Bearing		l
1050788-01 1050794-01	Seal	1	
1050795-02	Tube Assembly		
1U50796-01	Fitting	1	
1050797-01	Pin	1	l
1u50798-01	Plug		
1051267-01	Plate Identification		
1051569-02	Bolt, Machine		ı
1051671-01	Plate, Identification		
1051695-01	Cap	1	

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SUB LEVEL PART NUMBER				
USE   USE	SUB LEVEL PART NUMBER	PART DESCRIPTION	RH	LH
1051703-01			USE	USE
1051703-01	41154704 04	Backat	_	_
1U51703-01		1 =	l	
Select				
1U52291-01 1U52293-03 1U52296-03 1U52296-01 1U52296-01 1U525322-01 Plate, Identification  Varnish 6001-S Solvent AMS-34100 AMG 33 AMG 33 AMG 33 AMG 34 AMG 34 AMG 34 AMG 35 AMG 35 AMG 35 AMG 35 AMG 35 AMG 36 AMG 37 AMG 37 AMG 37 AMG 38 AMG 38 AMG 38 AMG 39 AMG 39 AMG 39 AMG 39 AMG 39 AMG 39 AMG 30 AMG 30 AMG 30 AMG 31 AMG 30 AMG 31 AMG 31 AMG 30 AMG 31 AMG 31 AMG 31 AMG 31 AMG 32 AMG 32 AMG 32 AMG 32 AMG 32 AMG 32 AMG 32 AMG 32 AMG 32 AMG 32 AMG 32 AMG 32 AMG 32 AMG 32 AMG 33 AMG 32 AMG 32 AMG 33 AMG 32 AMG 33 AMG 32 AMG 33 AMG 32 AMG 33 AMG 33 AMG 32 AMG 32 AMG 33 AMG 32 AMG 33 AMG 33 AMG 33 AMG 33 AMG 33 AMG 33 AMG 33 AMG 32 AMG 33 AMG 33 AMG 33 AMG 33 AMG 33 AMG 33 AMG 33 AMG 32 AMG 33 AMG 33 AMG 32 AMG 33 AMG 33 AMG 33 AMG 32 AMG 33 AMG 33 AMG 33 AMG 33 AMG 33 AMG 33 AMG 33 AMG 33 AMG 33 AMG 33 AMG 33 AMG 33 AMG 33 AMG 34 AMG 3		, ,,	İ	
1U52293-03 1U52294-03 1U52296-01 1U52296-01 1U525322-01 6001 6001 6001-S Solvent AMS-34100 AMS 33 AMS 34 AMS 33 AMS 34 AMS 34 AMS 34 AMS 34 AMS 34 AMS 35 AMS 34 AMS 35 AMS 34 AMS 35 AMS 34 AMS 36 AMS 36 AMS 37 AMS 36 AMS 37 AMS 37 AMS 37 AMS 37 AMS 38 AM	•	1	i	
1U52294-03 Barrier-Booster Assembly 1U52296-01 Packing 1U525322-01 Plate, Identification 6001 Solvent AMS-34.100 Flux Material AMG 3 Sleeving AMG 33 Wire, Magnet C9-4215 Casting Resin Lubricant DOW Corning-71984 Lubricant Fluid EE 4215, BLK Casting Resin HD3501 Lubricant Fluid EE 4215, BLK Casting Resin HD3501 Catalyst Catalyst Tape .005 x .25 M16878/278EE 925 Wire M16878/278EE 929 Wire M16878/278EE 929 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M3248/1-017 Packing M83248/1-017 Packing M83248/1-019 Packing M83248/1-019 Packing M83248/1-019 Packing M83248/1-034 Packing M83248/1-034 Packing M83248/1-035 Packing M83248/1-034 Packing M83248/1-035 Packing M83248/1-037 Packing M83248/1-038 Packing M83248/1-039 Packing M83248/1-030 Packing M83248/1-031 Packing M83248/1-033 Packing M83248/1-034 Packing M83248/1-035 Packing M83248/1-037 Packing M83248/1-038 Packing M83248/1-039 Packing M83248/1-031 Packing M83248/1-034 Packing M83248/1-035 Packing M83248/1-036 Packing M83248/1-037 Packing M83248/1-038 Packing M83248/1-039 Packing M8			02	02
1U525322-01 6001 6001-S 6001-S Solvent AMS-3410D Flux Material AMG 3 Sleeving AMG 33 Wire, Magnet AMG 34 Wire, Magnet AMG 34 Wire, Magnet AMG 34 Wire, Magnet AMG 35 DC 200 Dow Corning-71984 Lubricant Lubricant Lubricant Lubricant Lubricant Lubricant Resin Catalyst IMCOR 812 M16878/278EE 919 M16878/278EE 925 Wire M16878/278EE 925 Wire M16878/278EE 929 Wire M16878/278EE 939 M16878/278EE 949 M16878/278EE 949 M16878/278EE 969 M16878/278EE 999 M1687		1		
6001-S 6001-S Solvent AMS-34.100 AMG 33 AMG 33 AW ire, Magnet AMG 34 AW ire, Magnet C9-4215 Casting Resin DC 200 Lubricant DDW Corning-71984 EE 4215, BLK Casting Resin Lubricant D3561 Catalyst Catalyst Catalyst IMCOR 812 M16878/278EE 919 M16878/278EE 929 M1re M16878/278EE 929 M1re M16878/278EE 939 M1re M16878/278EE 939 M1re M16878/278EE 949 M1re M16878/278EE 959 M1re M16878/278EE 999 M1re M168				1
Solvent				
AMS-3410D AMG 3 AMG 33 AMG 34 AMG 34 AMG 34 AMG 34 AMG 34 AMG 34 AMG 34 AMG 34 AMG 34 AMG 34 AMG 36 AMG 37 AMG 37 AMG 37 AMG 37 AMG 38	****	1		
AMG 3 AMG 33 AMG 34 AMG		1		
AMG 34 C9-4215 C0200 Dow Corning-71984 EE 4215, BLK Casting Resin Lubricant Lubricant Fluid EE 4215, BLK Casting Resin Costing Resin Catalyst Catalys		1		
C9-4215 DC 200 DW Corning-71984 EE 4215, BLK Casting Resin Lubricant Fluid EE 4215, BLK Casting Resin Catalyst Catalyst IMCOR 812 IMCOR 812 IMCOR 812 IM6878/27BEE 919 M16878/27BEE 929 M16878/27BEE 929 M16878/27BEE 939 M16878/27BEE 949 M16878/27BEE 949 M16878/27BEE 959 M16878/27BEE 969 M16878/27BEE 99 M16878/27B				
DC 200		1	İ	
Dow Corning-71984 EE 4215, BLK HD3501 Catalyst DD3501 Catalyst DD3561 IMCOR 812 M16878/27BEE 919 M16878/27BEE 925 M1re M16878/27BEE 929 M1re M16878/27BEE 939 M1re M16878/27BEE 959 M1re M16878/27BEE 999 M1re M16878/27BEE 999 M1re M16878/27BEE 999 M1re M16878/27BEE 999 M1re M16878/27BEE 999 M1re M16878/27BEE 999 M1re M16878/27BEE 999 M1re M16878/27BEE 999 M1re M16878/27BEE 999 M1re M16878/27BEE 999 M1re M16878/27BEE 999 M1re M16878/27BEE 999 M1re M16878/27BEE 999 M1re M16878/27BEE 999 M1re M16878/27BEE 999 M1re M16878/27BEE 999 M1re M83248/1-017 Packing M83248/1-012 Packing M83248/1-015 Packing M83248/1-017 Packing M83248/1-033 Packing M83248/1-033 Packing M83248/1-034 Packing M83248/1-033 Packing M83248/1-034 Packing M83248/1-035 Packing M83248/1-031 Packing M83248/1-032 Packing M83248/1-033 Packing M83248/1-034 Packing M83248/1-035 Packing M83248/1-037 M83248/1-030 Packing M83248/1-031 Packing M83248/1-032 Packing M83248/1-033 Packing M83248/1-034 Packing M83248/1-035 Packing M83248/1-037 Packing M83248/1-037 Packing M83248/1-038 Packing M83248/1-039 Packing M83248/1-030 Packing M8324	1			
EE 4215, BLK		10-21 10-110		
HD3501		1	1	
IMCOR 812 M16878/278EE 919 Wire M16878/278EE 929 Wire M16878/278EE 929 Mire M16878/278EE 939 Wire M16878/278EE 969 Mire M16878/278EE 979 Mire M16878/278EE 979 Mire M16878/278EE 989 Wire M16878/278EE 989 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M16878/278EE 999 Wire M83248/1-007 M83248/1-012 M83248/1-015 M83248/1-015 M83248/1-017 M83248/1-017 M83248/1-017 M83248/1-033 M83248/1-034 M83248/1-034 M83248/1-034 M83248/1-034 M83248/1-034 M83248/1-034 M83248/1-034 M83248/1-034 M83248/1-035 M83248/1-034 M83248/1-034 M83248/1-036 M83248/1-037 M83248/1-037 M83248/1-038 M83248/1-039 M83248/1-039 M83248/1-030 M83248/1-034 M83248/1-035 M83248/1-034 M83248/1-035 M83248/1-034 M83248/1-035 M83248/1-036 M83248/1-037 M83248/1-037 M83248/1-038 M83248/1-038 M83248/1-039 M83248/1-039 M83248/1-039 M83248/1-030 M83248/1	I = = · · · · · ·			
M16878/27BEE 919 M16878/27BEE 925 Mire, 19 Strand M16878/27BEE 929 Mire M16878/27BEE 939 Mire M16878/27BEE 949 Mire M16878/27BEE 959 Mire M16878/27BEE 969 Mire M16878/27BEE 979 Mire M16878/27BEE 989 Mire M16878/27BEE 999 Mire M16878/27BEE 999 Mire M16878/27BEE 999 Mire M83248/1-017 M83248/1-013 M83248/1-015 M83248/1-017 M83248/1-017 M83248/1-017 M83248/1-032 Packing M83248/1-033 Packing M83248/1-034 Packing M83248/1-034 Packing M83248/1-034 Packing M83248/1-035 M81L-F-14256 Flux Lubricant MIL-I-15126 Type GFT MIL-I-15126 Type FFT MIL-I-23053 MIL-M-14 Type SDG MIL-M-14 Type SDG MIL-M-14 Type SDG MIL-M-14 Type SDG MIL-T-26317 MIL-T-26318 MIL-T-2631				
M16878/278EE 929 M16878/278EE 929 M16878/278EE 939 M16878/278EE 949 M16878/278EE 959 M16878/278EE 969 M16878/278EE 979 M16878/278EE 999 M16878/278EE 999 M16878/278EE 999 M16878/278EE 999 M16878/278EE 999 M16878/278EE 999 M16878/278EE 999 M16878/278EE 999 M16878/278EE 999 M16878/278EE 999 M16878/278EE 999 M16878/278EE 999 M16878/278EE 999 M16878/278EE 999 M16878/278EE 999 M16878/278EE 989 M16878/28EE 989 M16878/278EE 989 M16878/278EE 989 M16878/278EE 989 M16878/28/28/28/28/28/28/28/28/28/28/28/28/28				
M16878/27BEE 929 Wire M16878/27BEE 939 Wire M16878/27BEE 959 Wire M16878/27BEE 969 Wire M16878/27BEE 989 Wire M16878/27BEE 989 Wire M16878/27BEE 999 Wire M83248/1-012 Packing M83248/1-013 Packing M83248/1-015 Packing M83248/1-017 Packing M83248/1-019 Packing M83248/1-032 Packing M83248/1-032 Packing M83248/1-034 Packing M83248/1-034 Packing M83248/1-035 Packing M83248/1-036 Packing M83248/1-037 Packing M83248/1-038 Packing M83248/1-039 Packing M83248/1-030 Packing M83248/1-030 Packing M83248/1-031 Packing M83248/1-035 Packing M83248/1-036 Packing M83248/1-037 Packing M83248/1-038 Packing M83248/1-039 Packing M83248/1-031 Packing M83248/1-034 Packing M83248/1-035 Packing M83248/1-036 Packing M83248/1-037 Packing M83248/1-038 Packing M83248/1-039 Packing M83248/1-031 Packing M83248/1-032 Packing M83248/1-033 Packing M83248/1-033 Packing M83248/1-034 Packing M83248/1-035 Packing M83248/1-036 Packing M83248/1-037 Packing M83248/1-038 Packing M83248/1-038 Packing M83248/1-038 Packing M83248/1-038 Packing M83248/1-039 Packing M83248/1-038 Packing M83248/1-039 Packing M83248/1-039 Packing M83248/1-039 Packing M83248/1-039 Packing M83248/1-039 Packing M83248/1-039 Packing M83248/1-039 Packing M83248/1-039 Packing M83248/1-039 Packing M83248/1-039 Packing M83248/1-039 Packing M83248/1-039 Packing M83248/1-039 Packing M83248/1-039 Packing M83248/1-030 Packing M8	_ ::==:* :=			
M16878/27BEE 939 M16878/27BEE 949 M16878/27BEE 969 M16878/27BEE 969 M16878/27BEE 979 M16878/27BEE 989 M16878/27BEE 989 M16878/27BEE 989 M16878/27BEE 999 M16878/27BEE 999 M16878/27BEE 999 M16878/27BEE 999 M16878/27BEE 989 M16878/27BEE 989 M16878/27BEE 989 M16878/27BEE 989 M16878/27BEE 989 M16878/27BEE 989 M16878/27BEE 979 M16878/27BEE 989 M16878/27BEE 989 M16878/27BEE 989 M16878/27BEE 969 M16878/27BEE 969 M16878/27BEE 969 M16878/27BEE 969 M16878/27BEE 969 M16878/27BEE 969 M16878/27BEE 969 M16878/27BEE 969 M16878/27BEE 969 M16878/27BEE 989 M188248/1-012 M183248/1-013 M183248/1-013 M183248/1-013 M183248/1-013 M183248/1-013 M183248/1-013 M183248/1-		•		
M16878/27BEE 959 M16878/27BEE 969 M16878/27BEE 979 M16878/27BEE 989 M16878/27BEE 999 M16878/27BEE 999 M16878/27BEE 999 M16878/27BEE 999 M16878/27BEE 999 M16878/27BEE 999 M16878/27BEE 999 M16878/27BEE 989 M18878/1018 M16878/27BEE 989 M18878/1018 M16878/27BEE 989 M18878/1018 M16878/27BEE 989 M18878/1018 M16878/27BEE 989 M18878/1018 M16878/27BEE 9		Wire		
M16878/27BEE 969 Wire M16878/27BEE 979 Wire M16878/27BEE 989 Wire M16878/27BEE 999 Wire M83248/1-007 Packing M83248/1-012 Packing M83248/1-013 Packing M83248/1-017 Packing M83248/1-019 Packing M83248/1-032 Packing M83248/1-034 Packing M83248/1-035 Packing M83248/1-035 Packing M83248/1-036 Packing M83248/1-037 Packing M83248/1-031 Packing M83248/1-901 Packing M1L-F-14256 Flux Lubricant MIL-I-15126 Type GFT MIL-I-23053 Sleeving Shrink Oil MIL-T-23053 Sleeving Shrink Oil MIL-T-26317 Tape MIL-T-26317 Tape MIL-T-26317 Tape MIL-T-26317 Tape MIL-T-26317 Tape MIL-T-26317 Tape MIL-T-26317 Tape MIL-T-26317 Tape MIL-T-26317 Tape MIL-T-26317 Tape MS16555-619 Pin MS16555-619 Pin MS16555-619 Pin MS171528 Pin MS19060-18	l			
M16878/27BEE 979 M16878/27BEE 989 M16878/27BEE 999 M16878/27BEE 999 M3248/1-007 M83248/1-012 M83248/1-013 M83248/1-015 M83248/1-015 M83248/1-019 M83248/1-032 M83248/1-032 M83248/1-033 M83248/1-033 M83248/1-034 M83248/1-034 M83248/1-035 M83248/1-019 M83248/1-035 M83248/1-031 M83248/1-032 M83248/1-033 M83248/1-034 M83248/1-034 M83248/1-034 M83248/1-901 M1L-F-14256 MIL-G-27617 TY I MIL-I-15126 Type GFT MIL-I-15126 Type GFT MIL-I-23053 MIL-I-23053 MIL-L-6085 MIL-H-044 MS16555-619 MS16625-5056 MS16555-619 MS16555-619 MS16625-5056 MS171528 MS19060-18 MS19060-18	l			
M16878/27BEE 989 Wire M16878/27BEE 999 Wire M83248/1-007 Packing M83248/1-012 Packing M83248/1-013 Packing M83248/1-017 Packing M83248/1-019 Packing M83248/1-032 Packing M83248/1-034 Packing M83248/1-034 Packing M83248/1-901 Packing MIL-F-14256 Flux Lubricant Tape 3/8 Wide MIL-I-15126 Type GFT MIL-I-15126 Type FFT MIL-I-23053 Sleeving Shrink Oil MIL-M-14 Type SDG Molding MIL-T-26317 Tape MIL-T-27730 Sealant MIL-T-27730 Sealant MIL-T-43435 Tape-Lacing MMM-A-134, Type I Epoxy MS16555-619 Pin MS16555-619 Pin MS16555-619 Pin MS171528 Pin MS19060-18				
M16878/27BEE 999 Wire  M83248/1-007 Packing  M83248/1-013 Packing  M83248/1-015 Packing  M83248/1-017 Packing  M83248/1-019 Packing  M83248/1-032 Packing  M83248/1-034 Packing  M83248/1-034 Packing  M83248/1-901 Packing  M1L-F-14256 Flux  MIL-F-14256 Type GFT  MIL-I-15126 Type GFT  MIL-I-15126 Type PFT  MIL-I-23053 Sleeving Shrink  Oil  MIL-M-14 Type SOG Molding  MIL-T-26317 Tape  MIL-T-27730 Sealant  MIL-T-27730 Sealant  MIL-T-43435 Tape-Lacing  MMM-A-134, Type I Epoxy  MS16555-619 Pin  MS16555-619 Pin  MS171528 Pin  MS19060-18	•	I 1 2 2 2		
M83248/1-012	l	[ · · · · · -		
M83248/1-013		Packing		
M83248/1-015 M83248/1-017 M83248/1-019 M83248/1-032 M83248/1-033 M83248/1-034 M83248/1-034 M83248/1-901 MIL-F-14256 MIL-G-27617 TY I MIL-I-15126 Type GFT MIL-I-5126 Type FFT MIL-I-23053 MIL-I-6085 MIL-6085 MIL-M-14 Type SDG MIL-T-26317 MIL-T-27730 MIL-T-27730 MIL-T-27730 MIL-T-27730 MIL-T-243435 MMM-A-134, Type I MS16555-619 MS16625-5056 MS171524 MS171528 MS19060-18  Packing Packing Packing  Packing Packing  Packi	1	. •		
M83248/1-017 M83248/1-019 M83248/1-032 M83248/1-033 M83248/1-034 M83248/1-901 M83248/1-901 M81L-F-14256 MIL-G-27617 TY I MIL-I-15126 Type GFT MIL-I-5126 Type PFT MIL-I-23053 MIL-I-6085 MIL-H-14 Type SDG MIL-T-26317 MIL-T-27730 MIL-T-2	l*	I •		
M83248/1-019 M83248/1-032 M83248/1-033 M83248/1-034 M83248/1-034 M83248/1-901 MIL-F-14256 MIL-G-27617 TY I MIL-I-15126 Type GFT MIL-I-15126 Type PFT MIL-I-23053 MIL-L-6085 MIL-H-14 Type SDG MIL-T-26317 MIL-T-27730 MIL-T-27730 MIL-T-27730 MIL-T-43435 MIL-T-43435 MIL-T-43435 MIL-T-6385 MIL-T-6385 MIL-T-6385 MIL-T-7730 M				
M83248/1-033	I : : : : : : : : : : : : : : : : : : :	I •		
M83248/1-034 M83248/1-901 MIL-F-14256 MIL-G-27617 TY I MIL-I-15126 Type GFT MIL-I-15126 Type PFT MIL-I-23053 MIL-I-23053 MIL-H-6085 MIL-M-14 Type SDG MIL-T-26317 MIL-T-27730		l . <del>T</del>		
M83248/1-901 MIL-F-14256 MIL-G-27617 TY I MIL-I-15126 Type GFT MIL-I-5126 Type FFT MIL-I-23053 MIL-I-6085 MIL-H-6085 MIL-T-26317 MIL-T-27730 MIL-T-277		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
MIL-F-14256 MIL-G-27617 TY I MIL-I-15126 Type GFT MIL-I-15126 Type PFT MIL-I-23053 MIL-I-6085 MIL-L-6085 MIL-M-14 Type SDG MIL-T-26317 MIL-T-27730 MIL-T-27730 MIL-T-27730 MIL-T-43435 MIL-T-43435 MIL-T-43435 MIL-T-434655-619 MS16555-619 MS16555-619 MS16555-619 Pin MS171524 MS171528 MS19060-18		1	1	
MIL-G-27617 TY I MIL-I-15126 Type GFT MIL-I-15126 Type PFT MIL-I-23053 MIL-I-6085 MIL-M-14 Type SDG MIL-T-26317 MIL-T-27730 MIL-T-27730 MIL-T-27730 MIL-T-43435 MIL-T-43435 MIL-T-943435 MIL-T-943435 MIL-T-943435 MIL-T-943435 MMM-A-134, Type I MS16555-619 MS16625-5056 MS171524 MS171528 MS19060-18  Lubricant Tape 3/8 Wide Tape .005 x .25  Sleeving Shrink Oil Molding Tape Sealant Tape-Lacing Epoxy MMM-A-134, Type I MS16625-5056 Cap Pin MS171528 Pin MS19060-18		F 7 7 7 7		
MIL-I-15126 Type GFT MIL-I-15126 Type PFT MIL-I-23053 MIL-L-6085 MIL-M-14 Type SDG MIL-T-26317 MIL-T-26317 MIL-T-27730 MIL-T-43435 MIL-T-43435 MMM-A-134, Type I MS16555-619 MS16625-5056 MS171524 MS171528 MS19060-18  Tape 3/8 Wide Tape .005 x .25 Sleeving Shrink Oil Molding Tape Sealant Tape-Lacing Pin MS16625-5056 Cap Pin MS171528 MS171528 MS19060-18		1		
MIL-I-23053 Steeving Shrink  Oil  MIL-M-14 Type SDG Molding  MIL-T-26317 Tape  MIL-T-27730 Sealant  MIL-T-43435 Tape-Lacing  MMM-A-134, Type I Epoxy  MS16555-619 Pin  MS16625-5056 Cap  MS171524 Pin  MS171528 Pin  MS19060-18 Ball	MIL-I-15126 Type GFT		1	
MIL-L-6085 Oil MIL-M-14 Type SDG Molding MIL-T-26317 Tape MIL-T-27730 Sealant MIL-T-43435 Tape-Lacing MMM-A-134, Type I Epoxy MS16555-619 Pin MS16625-5056 Cap MS171524 Pin MS171528 Pin MS19060-18 Ball				
MIL-M-14 Type SDG Molding MIL-T-26317 Tape MIL-T-27730 Sealant MIL-T-43435 Tape-Lacing MMM-A-134, Type I Epoxy MS16555-619 Pin MS16555-5056 Cap MS171524 Pin MS171528 Pin MS19060-18 Ball		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		
MIL-T-26317 Tape MIL-T-27730 Sealant MIL-T-43435 Tape-Lacing MMN-A-134, Type I Epoxy MS16555-619 Pin MS16625-5056 Cap MS171524 Pin MS171528 Pin MS19060-18 Ball		1		
MIL-T-27730 Sealant MIL-T-43435 Tape-Lacing MMM-A-134, Type I Epoxy MS16555-619 Pin MS16625-5056 Cap MS171524 Pin MS171528 Pin MS19060-18 Ball		1		1
MMM-A-134, Type I Epoxy MS16555-619 Pin MS16625-5056 Cap MS171524 Pin MS171528 Pin MS19060-18 Ball		Sealant		
MS16555-619 Pin MS16625-5056 Cap MS171524 Pin MS171528 Pin MS19060-18 Ball		·•· - · - · - ·		
MS16625-5056		, · ·		
M\$171524 Pin M\$171528 Pin M\$19060-18 Ball				
MS171528 Pin MS19060-18 Ball				
1	MS171528	Pin		
MS20995-C20  Lockwire		1		
1 I I	MS20995-C20	Lockwire		



SUB LEVEL PART NUMBE	R PART DESCRIPTION	RH USE	LH USE
MS24585-C5	Spring		
MS24693-C3	Screw		
MS24693-C7	Screw	1	
MS27294-1	Cap	İ	
MS28774-006	Ring		
MS28774-010	Retainer		
MS28774-015	Retainer		
MS33540	Fastener		
MS35275-213	Screw		
MS51377-2	Valve Core		
MS51607-1	Valve Stem		
MS51958-60	Screw, Pan Head		
MS51959-2	Screw		
MS51959-4	Screw		
MS9105-13	Shaft		
MS9902-01	Plug		
NAJOH12-8P	Receptacle		l
NAJOH8-35P	Connector		l
NAS1190E06P8	Screw		l
NAS1351C3H10	Screw		l
NAS1351C3H8	Screw		l
NAS1352C04H4	Screw		
NAS1352C04H6	Screw		1
NAS1352C04H8	Screw		1
NAS1352C04LL4	Screw	-	
NAS1352C04LL6	Screw		
NAS1352C08H8	Screw		
NAS1352C08LL20	Screw		İ
QQ-B-654, GR5	Filler Metal		1
QQ-S-571	Solder		l
QQ-T-371	Tin		l
SED26100107-301	Initiator		1
STW4-2955	Lubricant		l
STW5-2702	Ignition Granules		1
STW5-2885	B-KNO3 Pellets		
STW5-2942	Lubricant		1
STW5-2984	Torque Seal		ļ
STW5-3241	Back Fill Gas	ľ	1
TT-E-529	Paint		
TT-L-50, Type II	Coating		1
TT-P-1757	Primer		
V-T-276	Thread		
1			l l

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#### TABLE 7.10-2 HARDWARE TEST MATRIX - S&A

HARDWARE DESCRIPTION	PART NUMBER	DM9	QM6	QM7	PV1	SMP	TEM 4	FLT 1		FLT 3	CURRENT FLIGHTS
S & A Device	1052295-01	х	х				a. East of a second				
S & A Device	1052295-02	ı		X	x	X		X	X		
S & A Device	1052295-03					1				X	
S & A Device	1052295-04					İ	x				13
Arming Monitor Assy	1050266-01	X	X			1	l '	ĺ	l		
Arming Monitor Assy	1050266-02			X	X	X		X	X	X	13
B B Assy	1052294-01	X	X	X	X	1		X			
B B Assy	1052294-02	1	ŀ			X	i	X	X	X	
B B Assy	1052294-03		ļ		l		x	ŀ			13
Gask-o-Seal	1051925-01	x	X	X	X	X		X	X	X	13
Gask-o-Seal	1051925-02									l	13
Bolt	1051569-02	X	X	X	X	X		x	X	X	13
SII	SED26100107	x	х	Х	x	X		x	X	X	13



#### 7.11 INSTRUMENTATION

#### **GROUND ENVIRONMENT INSTRUMENTATION**

The Ground Environment Instrumentation (GEI) on flight 13 is identical in configuration and fabrication to those used on flights 6 thru 11 except that the top level parts have been changed to reflect the fact that different case segments were used in the fabrication of the motor. For a more complete description of the GEI see TWR-18764.

#### **OPERATIONAL PRESSURE TRANSDUCERS**

The Operational Pressure Transducers (OPT) and their related hardware used on flights 12 thru 13 are identical in configuration and fabrication to those used on previous flights.



TABLE 7.11-1 END ITEM PARTS LIST - GEI / OEI

PART DESCRIPTION	REV	ECO
Instrumentation Inst, RH Fwd	A	9
	A	9
Instrumentation Inst, RH Fwd Ctr	A	8
Instrumentation Inst, LH Fwd Ctr	A	
Instrumentation Inst, RH Aft Ctr	A	10
Instrumentation Inst, LH Aft Ctr	A	11
Instrumentation Inst, RH Aft	NC	5
Instrumentation Inst, LH Aft	NC	7
Aft Segment Build-up, RSRM	В	5
Assembly & Closeout-KSC	В	21
	A	8
Instrumentation Inst, RH Exit Cone	A	8
	Instrumentation Inst, LH Fwd Instrumentation Inst, RH Fwd Ctr Instrumentation Inst, LH Fwd Ctr Instrumentation Inst, LH Aft Ctr Instrumentation Inst, LH Aft Ctr Instrumentation Inst, LH Aft Instrumentation Inst, LH Aft Aft Segment Build-up, RSRM Assembly & Closeout-KSC Instrumentation Inst, LH Exit Cone	Instrumentation Inst, RH Fwd Instrumentation Inst, LH Fwd Instrumentation Inst, LH Fwd Ctr Instrumentation Inst, LH Fwd Ctr Instrumentation Inst, LH Aft Ctr Instrumentation Inst, LH Aft Ctr Instrumentation Inst, LH Aft NC Instrumentation Inst, LH Aft Aft Segment Build-up, RSRM Assembly & Closeout-KSC Instrumentation Inst, LH Exit Cone A

SUB LEVEL PART I	NUMBER	PART DESCRIPTION	RH USE	L H USI
16A03055-01		Temperature Sensor		
1U50767-01		Base, Cable Mounting	1	1
1051373-01		Tube	İ	
1052308-01		Nut	ļ	
1052354-01,-02		Bracket, Cable		
1U75731-02		GEI Wiring Harness, LH Fwd Seg		
1075731-03		Cable Harness, LH Fwd Skirt	1	
1075732-02		GEI Wiring Harness, RH Fwd Seg		
1075732-03		Cable Harness, RH Fwd Skirt	1	
1075733-02		GEI Wiring Harness, LH Fwd Ctr Seg		
1U75734-02		GEI Wiring Harness, RH Fwd Ctr Seg		
lu75735-02		GEI Wiring Harness, LH Aft Ctr Seg		
u75736-02		GEI Wiring Harness, RH Aft Ctr Seg		
U75737-01		Harness, Wiring		
IU75738-01		Wiring Harness		1
IU75739-01		Harness, Cable		ŀ
IU75740-01		Harness, Cable		
IU76037-02		Harness, Wiring	ŀ	
IU76038-01		Harness, Wiring		1
423053/5-305-9		Insulation Sleeving		
41L-S-8802, Cl	g - 2	Sealant		
41L-T-4053		Tape, Glass Cloth		İ
4S21980-187		Ferrule, Outer	1	
4S21981-109		Inner Ferrule	1	
4S3367-2-2		Strap, Tie-down Red	l	
153367-2-2 153367-2-9		Strap, Tie-down Red Strap, Tie-Down Natural		
NJ-J22		Jiffy Connector		
OB575R36T0171		Shield, Braided		
STW4-2700		Cork Retaining Strip	1	
STW4-2700 STW4-2874		Adhesive, Conductive		
STW4-2074 STW4-3218		Adhesive (EA934NA)	1	
STW5-2788		Coating	1	
STW5-2700 STW5-2878		Adhesive (EC-2216 B/A)		1
STW5-2974		Paint, Polyethylene		
STW5-2774 STW5-3183		Ablation Compound		
		Primer		1
STW5-3215			l	
V6N220		Wire	İ	
V6N229		Wire		
V6N24N3NB		Cable, TST	1	1

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## TABLE 7.11-2 END ITEM PARTS LIST - OPERATIONAL PRESSURE TRANSDUCER

TOP LEVEL PART NUMBER	PART DESCRIPTION	REV	ECO
1U76699-03	Modified Ignition System	A	6
1U76699-04	Modified Ignition System	A	6

SUB LEVEL PART NUMBER	PART DESCRIPTION		LH USE
1050188-07	Transducer, Pressure	1	
1050188-10	Transducer, Pressure (1000 psia)	4	4
1050228-15	Preformed Packing		
1050228-20	Preformed Packing		
1050228-22	Preformed Packing		
1051369-02	Washer	l	
1051450-01	Special Bolt	2	2
1051450-03	Special Bolt	5	5
1051668-01	Plug, dual seal		
1075374-01,-02	Packing with Retainer		
1076487-01	Transducer Bolt Assembly	ĺ	l
1076487-03	Transducer Bolt Assembly		
660-015R10N142A	Cap		
MS20995C32	Safety Wire		
STW4-2955	Molykote Grease		
STW5-2984	Torque Seal		



TABLE 7.11-3 HARDWARE TEST MATRIX - INSTRUMENTATION - GEI/OEI

HARDWARE DESCRIPTION	PART NUMBER	DM9	QM6	QM7	PV1	SMP	FLT 1	FLT 2	FLT 3	CURRENT FLIGHTS
Adhsv EC-2216 B/A	STW5-2878	x	×	x	x	х	x	x	x	11-13
Adhsv EA934 NA	STW4-3218	x	×	×	x	x	x	X	x	11-13
Adhsy ECCO Bond	STU4-2874	x	x	l .	x	x				
Adhesive (Primer)	STW5-3215			l		x	ĺ	x	x	11-13
Ablation Compound	STW5-3183	x	ł	×		x	x	x	x	11-13
Sealant	MIL-S-2247			ļ .	x		x	x		
Sealant	MIL-S-8802,C8-2	x	l		x				x	11-13
Sealant	M-Coat A	x	х	x			ļ	l	l	
Cable Test	V6N24N3NB	l	1				х			11-13
Cable Test	V6N24N2NB	1		1	x			l		
Glass Cloth Tape	MIL-T-4053	1		l	x		x	ĺ		11-13
Base Cable Mount	1u50767-01	x	x	1	x		x	x	x	11-13
Base Cable Mount	1051216-05								x	
Base Cable Mount	1051216-04			1			1		x	
Cork	STW4-2700	1	1		x		x	х	x	11-13
Polyethylene Pnt.	STW5-2994	x	1					x	x	11-13
Strap, Tie Down	MS3367-2-2	1	1				x	x	x	11-13
Strap, Tie Down	MS3367-2-9		1				x	x	x	11-13
Strap, Tie Down	MS3367-3-9	×	x	x	x				ļ	ĺ
Temp Sensor	16SA03055-1	x	x	х	х	×	x	x	x	11-13
Bracket, Cable	1052342-01				1		x	x		
Bracket, Cable	1052342-02			l	ł		x	x		
Bracket, Cable	1052354-01						İ			11-13
Bracket, Cable	1052354-03			1	ļ	1	х	x	x	1
Bracket, Cable	1052354-04			1	ļ	1	1		х	
Slv Heat Reactive	M23053/5-305-9			1	l	l	x	x	x	11-13
Slv Heat Reactive	M23053/5-310-9			1		1	x		1	1
Slv Heat Reactive	M23053/5-309-9			İ			x		l	
Slv Heat Reactive	M23053/5-311-9			1	1		x	l		
Slv Heat Reactive	M23053/5-308-9			1	1		x			
Siv Heat Reactive	M23053/12-412		1		х	İ				
Wire	V6N229		1		х		x	X	X	11-13
Wire	V6N220				X		х	X	х	11-13
Wire	HREL63	x	X	X	x				1	
Wire	Constantan			1			l	j	1	
Wire	2842-7	x	X	X	1		1		1	
Wire	617-123	X	X	x			1			
Wire	CFW-147-0055-A		x							1
Wire	HML	1								
Wire	Cupron		x				l		1	
Wire	1u75749-01		ŀ	X	x		×			
Ferrule, Outer	MS21980-187						x	х	x	11-13
Ferrule, Inner	MS21981-109	1					x	x	x	11-13

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TABLE 7.11-4 HARDWARE TEST MATRIX - INSTRUMENTATION - OPT

HARDWARE DESCRIPTION	PART NUMBER	DM9	QM6	QM7	PV1	8MP	FLT 1	FLT 2	FLT 3	CURRENT FLIGHTS
Pressure Transducer	1050188-07	x	x	x		х				
Pressure Transducer	1050188-10			ŀ	X		X	X X	X	11-13
Transdor Blt Assy	1076487-01				X	Х	X		X	11-13
Transder Blt Assy	1076487-03	ļ	i		X	X	X	X	X	11-13
Transdor Blt Assy	1076488-01				X	X				Ì
Transder Blt Assy	1076488-02	Ì			X	X				
Transder Blt Assy	1050731-10		X	X						
Transder Bit Assy	1050731-09	1	X	X	ļ					i
Transder Bit Assy	1050731-01	X	X	X	İ					
Transder Bit Assy	1050731-03	X				l				ļ
Transder Bit Assy	1050731-04	X						1		
Transder Blt Assy	1050731-05	X	1	ļ						İ
Transder Blt Assy	1050731-08						1			
Special Bolt	1U51450-03				X	X	X	X	X	11-13
Special Bolt	1051450-01	X	X	X		1				
O-ring Packing	1050228-01	x	X	X	X	X	X	X	X	11-13
O-ring Packing	1050228-15	X	X	x	x	X	x	X	X	11-13
O-ring Packing	1050228-22	X	x	x	Х	X	X	X	X	11-13
O-ring Packing	MS28778-4	X	X	x	1					
O-ring Packing	MS28778-5	X				l				
O-ring Packing	1051732-02	X	X	x	X	X	X	X	X	11-13
O-ring Packing	1075374-01	X			X	X	X	X	X	11-13
Plug	1051668-01	X			1		X	X	X	11-13
Plug	AN814-55					l				
Safety Wire	MS20995C32	X	х	x	X	x	X	Х	Х	11-13
O-ring Lubricant Cart.	1051916-09	X	х	X	X	x	X	X	х	11-13
Molykote Lubricht	STW4-2955	X	х	X	X	x	X	X	Х	11-13
Torque Seal	STW5-2984	X	x	X	X	x	X	х	Х	11-13
Protective Cap	660-015R10N142/	ιx					X	X	X	11-13
Special Washer	1051369-02	X	X	X	X	X	X	Х	X	11-13

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#### 7.12 JOINT PROTECTION SYSTEM

360X013 has incorporated on all field joints the new joint protection system that was used on the 360X012 B redesigned This FJPS was to joint. installation timelines at Kennedy Space Center and to simplify or eliminate installation problems related to the present design of ethylene-propylene-diene-monomer (EPDM) moisture seal/extruded cork combination. It also eliminates the vent valves, the vacuum bagging process, and the need for a separate moisture seal. Figure 7.12-1 shows the redesign configuration as it was certified for flight use on the forward field joint of TEM-06. For additional information refer to TWR-17654 Technical Evaluation Motor NO. 6 (TEM-6) Final Test Report.

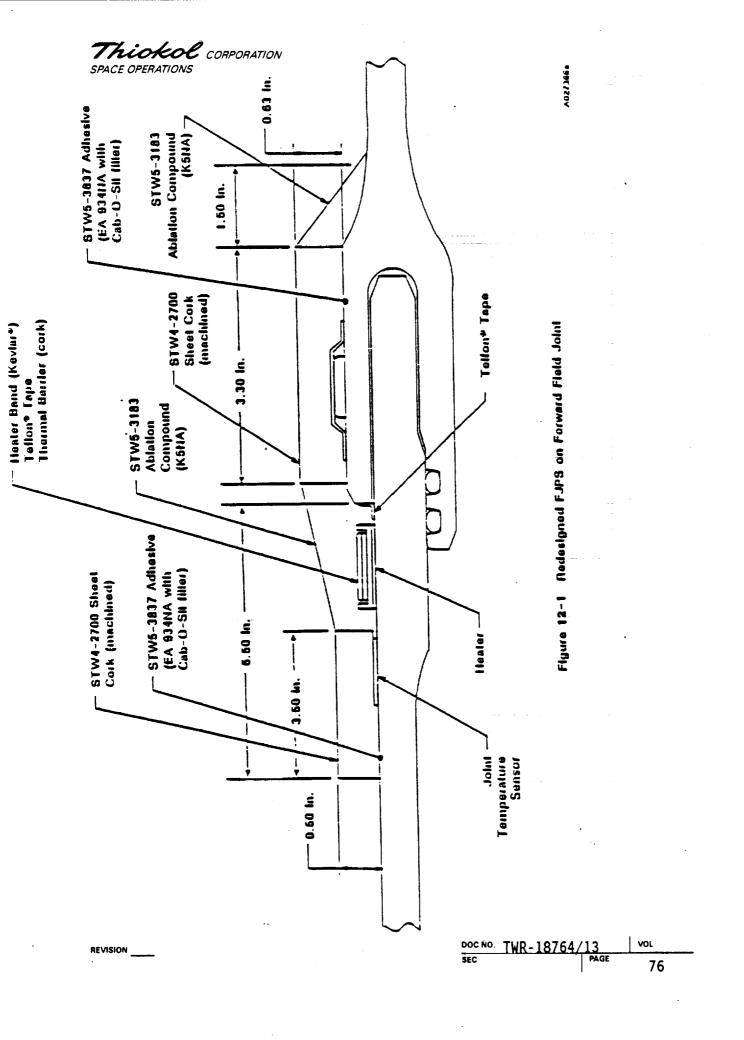
The field joint heaters and the igniter-to-case joint heater, (igniter-case-joint heater to be incorporated on later flights), have been enhanced by changing the leadwire insulation from Teflon to Kapton, to eliminate the coldsplice joint which has caused short-circuit failures on both previous versions of these heaters. These heaters were tested and certified per CTP-0218 and reported in TWR-60135 Qualification of the Enhanced Redesigned RSRM Field Joint and Igniter-to-case Joint Heaters Final Test Report.

Deviations RDW-0583R5 and RDW-0600R1 which deal with extruded cork are no longer applicable to the JPS subsystem since the new design eliminated their use.

Rockwell waiver S4138AR3 against CEI paragraph 3.3.5.5, Static Electricity and Lighting Protection, expires on Sept. 21, 1990. At this time new requirements will be issued against this waiver. New waivers will be issued, as necessary, when requirements are evaluated. JPS testing has not yet been completed so new waivers will be issued at that time.

The following data contains the current as-built configuration and qualification criteria.

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TABLE 7.12-1 END ITEM PARTS LIST - JOINT PROTECTION SYSTEM

TOP LEVEL PART NUMBE	R PART DESCRIPTION	REV	ECC
1U76802-04	Aft Segment Build-Up, RSRM, KSC	В	5
1076803-03	Assembly & Closeout - KSC	B	22
1076897-07, -08	Igniter Heater & Brkt. Instl. FWD	8	44
1u76969-01	Heater-Igniter to Case Joint		2A
1076979-01	Power Cable Insti. JPS Fwd. Seg.		1A
1076980-01	Power Cable Instl. JPS Ctr Fwd Seg.		1A
1076981-01	Power Cable Instl. JPS Ctr Aft Seg.		1A
1077252-01	Heater-Field Joint		

SUB LEVEL PART NUMBER	PART DESCRIPTION	RH USE	LH USE
1050767-01	Base, Cable Mounting		
1075347-05	Cushion		
1075790-01	Primary Cable Sensor		
1075791-01	Redundant Sensor Cable	İ	
1075805-01	Heater Sensor Assembly		
1075805-02	Heater Sensor Assembly		
1075810-01	Retainer, Cable Tie		
1075943-01	Sensor Element Assembly		[
1U76344-01	Clamp-T-Bolt		
1u76345-01	Cork Strip	l	
1076434-01	Retainer Assembly	l	1
1076702-01	Cable Assbly, Power, Elect Heater	1	
1076702-02	Cable Assbly, Power, Elect Heater	l	
1076703-01	Cable Assbly, Power, Elect Heater	l	1
1076703-02	Cable Assbly, Power, Elect Heater		
1076704-01	Cable Assbly, Power, Elec., Branched		
1076704-02	Cable Assbly, Power, Elec., Branched		
1076705-01	Cable Assbly, Power, Elec., Branched	ļ	
1076705-02	Cable Assbly, Power, Elec., Branched	Ì	ĺ
1076706-01	Cable Assmbly, Power, ElecHeater		
1076706-02	Cable Assmbly, Power, ElecHeater	]	
1077114-01	Strap, Heater		
1077115-01	Coupling, Heater Strap		1
1077119-01	Link		
1077120-01	Clip		
1077157-01	Thermal Barrier, Heat		
1077160-01	Cork Strip (AFT)		
1077160-02	Cork Strip (FWD)		l
1082837-01	Moisture Seal Strap		İ
ASTM B 168	UNS NO6600, .002 Thk, Cr, Ant		
ASTM B33	Copper Wire		İ
ASTM D 3368	FEP Film .002010 Thk		
CF-EI-2S	Foil0028 thk		ļ
EUT/361 CM	Marker		l
M23053/1-201-0	Insul. Sleeving, Elec.		l
M23053/5-104-0	Shrink, Sleeve		l
M23053/5-105-9	Sleeving		1
M23053/5-108-9	Sleeving	1	ł
M23053/5-307-9	Insulation Sleeving, Electrical		]
M7078/26-14-2	Cable Elec. Shielded .	1	1
M7078/28-24-3	Shielded Cable		1
M81381/10-24-NO	Leadwire	1	
M81381/10-26-NO	Wire		1
M85049/24-13W	Backshell, 90 Deg. RFI		
M85049/24-9W	Backshell, 90 Deg, RFI		1
MIL-C-27500	Cable, Elec, Shielded		
MIL-I-15126	Insul. tape, Elec.	1	
	1	<u> </u>	

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SUB LEVEL PART NUMBER	PART DESCRIPTION	RH USE	LH
MIL-I-23053	Insulation Sleeving, Electrical		
MIL-1-23594	Teflon Tape Type I		l
MIL-I-631 TY G,	Insulation, Elec.		
MIL-M-24041, CAT A	Mold. and Pot. Cmpd. PEU TY I or II		
MIL-N-46025	Nickel Strip		
MIL-P-46112, Ty.II	Plastic		
MIL-R-6855, CLASS 2	Tubing		
MIL-S-46163 Ty II	Compound, Thread Locking		
MIL-S-8802 TY I	Seating Compound B-2 or B-1/2		
MIL-T-4053	Tape		
MIL-T-43435, TY I	Tape		
MIL-T-87128, Size FF	Thread		
MIL-T-87130, TY VI	Webbing		
MIL-Y-1140 FORM 2	Cord		
MS20995C32	Lockwire		
MS3180-14C	Protective cap		
MS3180-16	Protective Cap		
MS3180-16C MS3180-18C	Cap, Proctective Protective Cap		
MS3181-14C	Cover, Prot, Ropt		l
MS3181-18C	Protective Cap		l
MS3367-2-6	Tie, Cable		
MS3367-2-9	Strap, Tiedown		
MS3367-3-9	Strap, Tiedown		
MS3367-5-0	Strap, Tiedown		
MS3471L14-4S	Receptacle Connector		
MS3471L14-4SW	Receptacle Connector		
MS3471L18-8S	Connector, Receptable		
MS3471L18-8SW	Connector, Receptacle		l
MS3474L18-8P	Receptacle Connector		
MS3474L18-8PW	Receptacle Connector		
MS3474L18-8S	Connector, Recotacle		
M\$3474L18-8SW	Connector, Receptacle		
MS3475L14-4P	Connector, Plug		
MS3475L14-4PW	Connector, Plug		
MS3475L18-8P	Connector, Plug		ŀ
MS3475L18-8PW	Connector, Plug		l
MS3475L18-8S	Connector Plug		
MS3475L18-8\$W	Connector Plug		
MS3476L16-26P	Connector, Plug		
M\$3476L16-26PW	Connector, Plug Resin Compounds, Epoxy		
MSFC-SPEC-222 NB-GSP-12	Sealing Plug		
NB-GSP-12	Plug, Seal		
NB-RFI-12-3	Backshell, RFI		
NB-RF1-14-3	Backshell		
NB-RFI-16-3	Backshell		ŀ
NB-RFI-18-3	Backshell		ŀ
NB-RFI-18-5	Backshell, RFI		ŀ
NB-S-16	Strain Relief		l
NB6E16-26PNT	Plug Connector		
NB6E16-26PWT	Connector, Plug		
NB6GE14-4PNT	Connector, Plug		
NB6GE14-4PWT	Connector		l
NB6GE18-8PNT	Plug Connector		
NB6GE18-8PWT	Plug Connector		
NB6GE18-8SNT	Connector Plug		
NB6GE18-8SWT	Connector Plug		
NB7E18-8PNT	Receptacle Connector		
	Receptacle Connector		

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SUB LEVEL PART NUMBER	PART DESCRIPTION	1	LH USE
NB7E18-8SNT	Receptacle Connector		
NB7E18-8SWT	Receptacle Connector		l
NJ-J22	Connector		i
NJ-P22	Coctact		1
QQ-C-576	Ribbon, .0025 thk x .150 w		1
QQB575F36N0125	Braid, Wire		
RR-W-360, Ty.I, CL I	Wire Fabric, Industrial		ŀ
SN 10 WRAP 2	Solder		l
SN 60 WRAP 3	Solder		l
STW4-2679	Microfine Silicon Dioxide		1
STW4-2700	Cork Sheet	1	1
STW4-2736	Insulation	1	1
STW4-2874	Adhesive	1	
STW4-3218	Adhesive		
STU4-3347	Heat Transfer Cement		
STU4-3444	Foil, Copper	ļ	l
STW4-3611	Yape	ŀ	1
stu4-3784	Primer		1
STW4-3785	Primer	ı	1
STW5-2664	Primer		
STW5-2798	Adhesive	ı	1
STW5-2994	Paint	- 1	1
STW5-3183	Ablation Compound		
STW5-3215	Primer, adhesive		
STW5-3226	Primer		1
STW5-3837	Adhesive		
TMS-1003	Wire, Element	1	
TT-L-50, Type II	Lacquer, Clear		

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TABLE 7.12-2 HARDWARE TEST MATRIX - JOINT PROTECTION SYSTEM

HARDWARE DESCRIPTION	PART NUMBER	DM9	QM6	OM7	PV1	SMD	TEM 4	TEM 5	TEM 6	TEM 7	FLT 1	FLT 2	FLT 3	CURRENT FLIGHTS
Heater	1075346-01	×	х	x	x	x					x	×	х	
Heater	1076698-01				1	X							X	
Igniter Heater	1076341-01				x	x							X	
Igniter Heater	1076341-02					x			İ					
Sensor Assembly	1075805-01	х	X	X	x	x					X	х	X	13
Sensor Assembly	1075805-02	×	X	x	x	x	1			٠ ا	x	X	X	13
Thermal Barrier	1082838-01	x	x	х	x	x					X	x	X	
EPDM Weather Seal	1082835-01	x	x	х	х	x					X	х	X	
EPDM Weather Seal	1082839-01	x	X	x	x	x					x	x	х	
Keylar Strap	1082837-01	x	x	х		x					x	х	X	13
Kevlar Strap	1082837-02	X	X	X		x					×	×	x	
Kevlar Strap	1082837-04	1				1						İ		
Extruded Cork	1075820-01	x	х	х	l	x					x	x	X	
Extruded Cork	1082836-01	×	x	x		x			ļ		x	x	X	
Vent Valve	1076192-01	X	x	x	l	x			l		x	x	X	
Cable Assembly	1µ75933-01	x							İ			l	ł	
Cable Assembly	1075933-02		×	x	l	1								
Cable Assembly	1076040-01	×				]								
Cable Assembly	1076040-02		x	x	1	1								
Cable Assembly	1u75956-01			ļ		l					x			
Cable Assembly	1075956-02				1	1		İ				×		
Cable Assembly	1075956-03				l	1						x		
Cable Assembly	1075957-01				1						x			
Cable Assembly	1075957-02	1	l		l	l			İ			x		
Cable Assembly	1075957-03		i		1							x		
Cable Assembly	1076348-03												x	
Cable Assembly	1u76376-03				1	l							X	
Cable Assembly	1076376-04					1					ŀ	į	X	
Cable Assembly	1076377-03				ļ				l				X	
Cable Assembly	1076377-05				l	1							x	
Cable Assembly	1076979-01					l		X	1					13
Cable Assembly	1076981-01					l		X				ļ		13
Cable Assembly	1076980-01							x				l		13
Igniter Heater	1076969-01			1	l	1	x	l .				l		13
Heater	1076967-01				ļ		x					l		
Cork Strip	1077160-01	-				1	l"		x					13
Cork Strip	1077160-01				l				x					13
Heater	1077150 02				l				x	l				13
Meater Kevlar Strap	1077232-01			1	l				x	l	1			13
	1077114-01								x					13
Thermal Barrier	10,,,15,,01	1	1	l	l	i i	l		^	ı	1			د.

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TABLE 7.12-3	REDESIGNED SOLID ROCKET BOOSTER MOTOR	HARDWARE CERTIFICATION MATRIX	JOINT PROTECTION SYSTEM
	REDESI GNE	HARDI	ō

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	REGUIRENENT	HETHOD	IMPLEMENTING	DMILN	EVIDENCING	STATUS
		×				
	3.2.1 Performance	×				
	3.2.1.3 Case 7.3.1.2 Dein	×	T. VI 167777 . UNI	TCX-2 0	172.2	- Page 1
		Test	Vot. 17,	15X-2.0	TWR-50021	Closed
	3.2.1.5.3 Igniter Heater	Anel	Vol. IX.	ASV-7.0	TWR-16404	Closed
		As	. Vol. IX,	ASV-8.0	TUR-16405	Closed
		Test	•	TGX-19.0	TUR-17592	Closed
		Test	Vol. 11,	TGX-6.0	TUR-17591	Closed
		Test		TSX-8.0	TWR-18800, TWR-60135	Closed
		Test	. Vol. IX,	TGX-21.3	TWR-19899	Closed
		Test	. Vol. IX,	TGX-21.4	TWR-17649	Closed
		Test	•	TSX 10.0	TWR-19941	Closed
	3.2.1.6 Electrical and Instrumentation	×				
	3.2.1.6a. Electrical Power	Siml	Vol. IX,	ASW-1.0	TWR-18374	Closed
	3.2.1.6d. Circuitry	Sial	Vol. IX,	ASU-1.0	TWR-18374	Closed
	3.2.1.6e. Electromagnetic compatibility	Sim	Vol. IX.	ASU-1.0	TWR-18374	Closed
	3.2.1.6f. Electrical bonding	Sial		ASW-1.0	TWR-18374	Closed
	3.2.1.6g EEE parts	Simi		ASW-1.0	TuR-18374, RDM-0571	Closed
	.6.2	Anal		ASV-3.0	TWR-16097	Closed
	Instrumentation		•			
	-	Anat	Vol. IX,	ASV-7.0	TWR-16404	Closed
		Demo	Vot. IX,	TSX-1.0	TWR-15763	Closed
		Demo	TUR-15723: Vol. 11, T	TGX-6.0	TWR-17591	Closed
SE	3.2	×				
C N	Protection System 7 2 1 11s Maintain Case Rield Loint of	Appl	Tub. 15723. Val. 1V A	A S.V. T. O	Tub.14007 Tub.50018	Pesol
0.		ğ	<u>`</u>	0.0	BIOC-WILL TOOL WILL	2000
IV		Anal	TMR-15723: Vol. 1X, A	ASV-5.0	TWR-17253	Closed
VR.		Anal	Vol. IX,	ASV-5.0	TWR-17415	closed
-]		Test		TGX 21.3	TWR-19899	Closed
8		Anal	3: Vol. 1X,	ASV-5.0	TWR-17418	Closed
<u> 76</u>		Anal	WTP-0080		TWR-16574	Closed
14,		Test	Vol. IX,	TSX-1.0	TWR-15763	Closed
<u>/</u> ]		Test		TSX 5.0	TWR-60135	closed
3 PAC		Test			TWR-17272	Closed
ΞE		Test	Vol. 11,	TGX-3.0	TWR-17371	Closed
		Test	Vol. 11,	1GX-4.0	TWR-17372	Closed
L		Test		TGX-5.0	TWR-17373	Closed
VO		Test	: Vol. 11,	TGX-19.0	TWR-17592	Closed
81		Test	: Vol. 11,	TGX-6.0	TWR-17591	Closed
<b>#</b> *******		Test	Vol. IX,	0.6-xss	TWR-17098	Closed
		Test	TWR-15723: Vol. 1X, T	TGX-21.4	TWR-17649	Closed

"CS" Indicates reference to a closure statement provided by the cognizant engineer that states compliance or rationale to satisfy the requirement for this flight.

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TABLE 7.12-3
REDESIGNED SOLID ROCKET BOOSTER MOTOR HARDWARE CERTIFICATION MATRIX
JOINT PROTECTION SYSTEM

REQUIREMENT	METHOD		IMPLEM	IMPLEMENT 1 NG		EVIDENCING	STATUS
	Test	TUR-15723: Vol	×	15X-10.0	TUR-19941		Closed
	Test		=	11 TGK-21.5	TWR-17654		Closed
	Anal		×	ASV-3.0	TWR-50018		Desolo
3.2.1.11b Prevent Accumulation of Rain	Anal		×	ASV-1.0, ASV-2.0	TWR-18136		Closed
	Test		×	TSX-2.0	TWR-17242		Closed
	Test		×	TSX-2.0	TWR-50021		Closed
	Test				TWR-18181		Closed
3.2.1.11d Remain intact through flight	Anal	TUR-15723: Vol.	X,	ASV-1.0 & -2.0	TWR-18136,	, L223:FY89:508	Closed
	Anal		×	0.4-VSA	TUR-16496		Closed
	Anal			ASV-12	TUR-19679		Closed
	Test	WTP-0080			TWR-16574		Closed
	Test	TWR-15723: Vo	, X	Vol. 1X, SSX-12.0	TWR-17245		Closed
	Test	ETP-0232	•		TAR-18305		Closed
	Test	TUR-15723: Vol.	, X	SSX-8.0	TWR-17243		Closed
	Test	TWR-15723: Vol.		SSX-3.0	TJR-17273		Closed
	Test	TWR-15723: Vol.	×	SSX-10.0	TUR-17229		Closed
	Test	TWR-15723: Vol.	×		TWR-18181		Closed
	Anal	TUR-15723: VOL.	×	ASV-1.0	TuR-50019		Closed
3.2.1.11.1 Electrical Characteristics	×						
3.2.1.11.1.2 Power Supply	Test	TUR-15723: Vo	Vol. IX,	TSX-1.0	TUR-15763		Closed
	Test	TUR-15723: Vol.		1x, 15x-8.0	TWR-18800		Closed
	Test	M/A			TWR-17272		Closed
	Test		.; ≃ :	1x, TSX-1.0	TWR-17415		Closed
3.2.1.12 Case Factory Joint External	Test	TUR-15723: Vo	Vol. IX,	IX, TSX-2.0	TWR-17242		Closed
Seal	,		;		1		7
	Test	15/25:	Vol. IX,	IX, SSX-2.0	16271-XM		riosed
	Test			4	TWR-17272		Closed
	Test	TWR-15723: Vol.		IX, SSX-8.0	TWR-17243	i i	Closed
3.2.4 Maintainablility	Anal	TUR-15723: Vol.		11, AGV-16.0	TWA-1066,	TWR-13880	Closed
3.2.5 Operational Availability	×						
3.2.5.1 Assembly/Disassembly of	Simi	TWR-15723: Vo	Vol. 1X,	ASU-1.0	TUR-18374		Closed
Segments	į		:	0 27 0	T. B 17771		7
	OE DO				1/C/1-X/1		800
	Centro				15/C/1-X/		riosed riosed
	Demo			DGX-19.0	- 1/3/3		Descri
	Demo				24C/1- XM		נוספפ
3.2.5.6 Useful Life	Sial		-		TWR-18374		Closed
	Anal				TWA-1066		Closed
	Test			TGX-20.0	RDW-0569R2	2	Closed
	Test			SSX-10.0	TWR-17229		Closed
3.2.6.5 Debris Prevention	Anal			ASV-2.0	TWR-18136	1	Closed
	Anal			ASV-2.0	TUR-17243,	, TUR-50019	Closed
				4.			•

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TABLE 7,12-3	REDESIGNED SOLID ROCKET BOOSTER MOTOR	HARDWARE CERTIFICATION MATRIX	JOINT PROTECTION SYSTEM
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REVISIO		REDESIGNED SOLID ROCKET BOOSTER MOTOR HARDWARE CERTIFICATION MATRIX JOINT PROTECTION SYSTEM			
REQUIREMENT	METHOD	IMPLEMENTING	EVIDENCING	ی	STATUS
	1604	Tue-15723: Vol. 1X. ASV-4.0	TUR-16495		Closed
	Anal		TuR-18871		Closed
	Test	TUR-15723: Vol. 1X, SSX-12.0	TUR-17245		Closed
3.2.7 Environment	×				
3.2.7.1 Natural Environment	×				
3.2.7.1a Prelaunch	×				,
3.2.7.1a.1 Solar Radiation	Anal	5723: Vol. V,	8136,		Closed
3.2.7.1a.2. Air Temperature	Anat	5723: Vol. V, A	TWR-18136, TWR-17009		Closed
	Test	5723: Vol. 11,	TUR-1/5/5		Closed
	1651	1WK-13/23; VOL. 11, 16K-6.U Tub.15727; Vol. 11 TCV-6.0	Tub-17501		Description of
	Anat	Vol	Tue-19679		Closed
3,2,7,1a,3 Wind	Na Jan	Vol. V.	TUR-17009		Closed
3.2.7.1a.4. Hunidity	Anal	Vol.	TWR-18136, RDW-0603		Closed
3.2.7.1a.5 Rain	Anal	Vol. 11,	TWR-18136		Closed
	Test	Vol. 1X,	TuR - 50021		Closed
3,2,7,1a.6. Salt Air	Sim	Vol. 1X,	TWR-18136		Closed
3.2.7.1a.7. 0zone	Anal	TUR-15723: Vol. 11, AGW-1.0	TWR-18617		Closed
3.2.7.1b. Launch and ascent	× ·	:	1		7
3.2.7.1b.1. Wind	Anal	TWR-15/23: Vol. V, AUV-5.U	IWR-1/009		closed
5.2.7.1c. Recovery	×	0 7-10-4 No. 1-10 - 5-02-5 Mar	T. D. 1017.		Post
3.2./.ic.l. Air/sea temperature	Anal	THE 15/23: VOL. 14, ASV-0.U	Tub.: 18417		Pesol
3.2.7.10.2. Satimity	Ē ;				
ı	× >				
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	X Y	TUB.15727: USI V ANV-3 O	TUB-17009		Closed
: N	And I	· >	TUR-17009, TUR-16496 & TUR-18871	We-18871	Closed
	Anel	Vol. V.	TWR-50017		Closed
7 3.2.7.2.1c. Re-entry	Anal	Vol. IX	TWR-18136		Closed
	Anal	TWR-15723: Vol. V, AOV-3.0	TUR-16496		Closed
	×				;
bo 3.2.7.2.2a Prelaunch through separation	Anal	Vol. IX,	TWR-18136, L223:FY89:508, TWR-50019	3, TWR-50019	Closed
76	Test	Vol. IX,	TWR-1/245		Closed
<b>4</b> /	Ya.	Vol.	TUR-19679 Tub-14801		Closed
11		THE 15/23: VOL. IA, ASV-0.0	THE 10001	322.5780.508	Desc 17
Recovery	NA NA	VOI . 14,		23:1107:200	20012
	Anal	TJR-15723: Vol. 1X, ASV-6.0	TUR-50019		Closed
	Anal	Vol. IX,	TWR-18136		Closed
VOI	Siml	Vol. IX,			Closed
	Siml	TWR-15723: Vol. IX, ASV-1.0	TWR-18374, TWR-50019		Closed
3.2.9 Storage	×	2	T. 1027/ 1021-05/000		Pa 20 12
2.2.7.1 Post Acceptance Requirements	) III	IMA-12/23: VOI. 1A, ASM-1.0	THE COURT OF THE COURT		

TABLE 7.12-3	REDESIGNED SOLID ROCKET BOOSTER MOTOR	HARDWARE CERTIFICATION MATRIX	JOINT PROTECTION SYSTEM
	REDESIGNED :	HARDWARI	TNIOC

TWR-18374  TWR-18374  TWR-18374  TWR-18011 Supp. B & E  TWR-18015  TWR-18136  TWR-18136  TWR-18136  TWR-18136  TWR-18230  TWR-18230  TWR-18230  TWR-18230  TWR-18230  TWR-18230  TWR-18230  TWR-18230  TWR-18251  TWR-18305			KEDESIGNED SOLID KOCKE! BOOSIEK MOIUK HARDWARE CERTIFICATION MATRIX JOINT PROTECTION SYSTEM			
1.2.9   19 Vertical or horizontal storage   Stat   THE-15723   101. ID, ASH-1.0   THE-16574   THE-16	REQUIRENENT	METHOD	IMPLEMENTING	E	TDENCING	STA
3.3.5.1 Selectrical Standards	3.2.9.1a Vertical or Morizontal Storage 3.2.9.1b 180 day Launch Pad stay	Siml	Vol. IX, Vol. IX,	TUR-18374 TUR-18374		ចច
Test   W/A   The 18155   The 1815   The 18	<ol> <li>Jesign and Construction Standards</li> <li>J.1.1 Selection of Materials, Parts, and Processes</li> </ol>	x Test	N/A	TWR-19052, TWR-40	858	<u> </u>
1.5.1   Electromagnetic Interference   Test   IM-15723; vol. IX, SSS-14.0   IN-15724		Test	4/A	Supp.		ប ប
Test   IM - 15723; Vol. IX, SSX-14.0   TRR-18180   Test   TRR-18180   Test   TRR-18180   Test   TRR-18180   Test   TRR-18180   Test   TRR-18180   Test   TRR-18180   Test   TRR-1823   Test   Trr-1823   Test   Trr-1823   Test   Trr-1823   Test   Trr-1823   Test   Trr-1823   Test   Trr-1823   Test   Trr-1823   Test   Trr-1823   Test   Trr-1823   Test   Trr-1823   Test   Trr-1823   Test   Trr-1823   Test   Trr-1823   Test   Trr-1823   Test   Trr-1823   Test   Trr-1823   Test   Trr-1823   Test		Test	W/A	TUR-18305		5
3.3.5.1 Electromagnetic Interference Simil Interfer		Test	TWR-15723: Vol. 1X, TSX-2.0	TWR-17242		2 2
3.3.5.1 Electromagnetic Interference Sind Nat 19723: vol. 1K, SSV-11.0 TOR-17230 3.3.5.5 Static Electricity & Lightning Anal 1 Nat 19723: vol. 1K, ASV-12.0 TOR-17230 Protection Test TWR-19723: vol. 1K, ASV-13.0 TOR-17233  3.3.5.6 Marness and Cables Test TWR-19723: vol. 1K, SSV-13.0 TOR-17233  3.3.5.1.1 Structural Sf Nat 19723: vol. 1K, SSV-13.0 TOR-17233  3.3.5.1.1 General Safety Factors TOR-19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.1 General Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.2 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.2 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.2 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.2 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.2 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.2 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.2 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.2 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.2 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.2 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.2 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.2 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.2 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.2 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.2 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.3 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.3 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.3 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.3 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19723  3.3.6.1.1.5 Bond Safety Factors Simi Nat 19723: vol. 1K, SSV-13.0 TOR-19		Test	-15723: Vol. 1X,	TUR-18480		5 5
3.3.5.1 Electromagnetic Interference         Tiest WAA         TIME-17272         TIME-17272           3.3.5.2 Electrical Bonding         Anal TRE-15723: Vol. IX, ASH-1.0         TIME-17272           3.3.5.5 Electrical Bonding         Anal TRE-15723: Vol. IX, ASH-1.0         TIME-17372           Protection         Test TRE-15723: Vol. IX, TGK-5.0         TIME-17373           1.3.5.6 Harness and Cables         Test TRE-15723: Vol. IX, TGK-2.0         TIME-17373           3.3.6.1.1 Structural SF         Anal TRE-15723: Vol. IX, ASH-1.0         TIME-17503           3.3.6.1.1 Structural SF         Anal TRE-15723: Vol. IX, ASH-1.0         TIME-16503           Anal TRE-15723: Vol. IX, ASH-1.0         TIME-16503           Anal TRE-15723: Vol. IX, ASH-1.0         TIME-16503           Test TRE-15723: Vol. IX, ASH-1.0         TIME-16503           Anal TRE-15723: Vol. IX, ASH-1.0         TIME-16503           Anal TRE-15723: Vol. IX, ASH-1.0         TIME-16503           Anal TRE-15723: Vol. IX, ASH-1.0         TIME-16503           Anal TRE-15723: Vol. IX, ASH-1.0         TIME-16503           Test TRE-15723: Vol. IX, ASH-1.0         TIME-16503           Test TRE-15723: Vol. IX, ASH-1.0         TIME-16503           Test TRE-15723: Vol. IX, ASH-1.0         TIME-16503           Test TRE-15723: Vol. IX, ASH-1.0         TIME-16503 <td></td> <td>Test</td> <td>-15723: Vol. 1X,</td> <td>TuR-17230</td> <td></td> <td>ប</td>		Test	-15723: Vol. 1X,	TuR-17230		ប
3.3.5.1 Electricity & Lightning Anal TuR-15723 vol. IX, ASH-1.0 TuR-15374  3.3.5.2 Electricity & Lightning Anal TuR-15723 vol. IX, ASH-1.0 TuR-15727  3.3.5.5 Static Electricity & Lightning Anal TuR-15723 vol. IX, TGK-5.0 TuR-1708  Test TuR-15723 vol. IX, TGK-5.0 TuR-1708  Test TuR-15723 vol. IX, TGK-5.0 TuR-1708  Test TuR-15723 vol. IX, TGK-5.0 TuR-1708  Test TuR-15723 vol. IX, TGK-5.0 TuR-1709  Test TuR-15723 vol. IX, TGK-7.0 TuR-1709  3.3.6.1.1 Structural SF Anal TuR-15723 vol. IX, ASH-1.0 TuR-1807  Anal TuR-15723 vol. IX, ASH-1.0 TuR-1807  Anal TuR-15723 vol. IX, ASH-1.0 TuR-1807  Anal TuR-15723 vol. IX, ASH-1.0 TuR-1807  Anal TuR-15723 vol. IX, ASH-1.0 TuR-1807  Anal TuR-15723 vol. IX, ASH-1.0 TuR-1807  Anal TuR-15723 vol. IX, ASH-1.0 TuR-1807  Anal TuR-15723 vol. IX, ASH-1.0 TuR-1807  Anal TuR-15723 vol. IX, ASH-1.0 TuR-1807  Test TuR-15723 vol. IX, ASH-1.0 TuR-1807  Anal TuR-15723 vol. IX, ASH-1.0 TuR-1809		Test		TUR-17270		ັບ
3.3.5.5 Static Electricity & Lightning less I TMR-15723: Vol. IX, IGK-5.0 TWR-1773 TRR-15723: Vol. IX, IGK-5.0 TWR-1773 TRR-15723: Vol. IX, IGK-5.0 TWR-1773 TRR-1773 TRR-1773: Vol. IX, IGK-5.0 TWR-1773 TRR-1773 TRR-1773: Vol. IX, IGK-5.0 TWR-1779 TRR-1777 TRR-1777	3.3.5.1 Electromagnetic Interference	Sim	۷٥٠ الا.	TWR-18374		บิ ใ
Test TWF-15723 vol. 1K, SSK-13.0   TWR-15735   TWR-17735   TWR-1	3.3.3.2 Electrical Bonding 3.7.5 S Static Flactricity & Lightning	A Cal	, , , ,	FMA-87-0-63		כ כ
Test THR-15723 vol. IX, 18C+5-0   THR-17373   Test THR-15723 vol. IX, 18C+5-0   THR-17373   Test THR-15723 vol. II, 16C+6-0   THR-17373   Test THR-15723 vol. II, 16C+6-0   THR-17579   Test THR-15723 vol. IX, 18C+5-0   THR-17579   Test THR-15723 vol. IX, 18C+7-0   THR-16549   THR-16549   Test THR-15723 vol. IX, 18C+7-0   THR-16549   THR-16549   Test THR-15723 vol. IX, 48C+60   THR-16649   THR-16649   Test THR-15723 vol. IX, 48C+60   THR-16649   THR-16649   Test THR-15723 vol. IX, 48C+60   THR-16649   THR-16649   Test THR-15723 vol. IX, 48C+60   THR-16649   THR-16	Protection	i	:			•
Test   TMR-15723   Vol.   IX   SSK-13.0   TMR-17098		Test	Vol. IX,	TWR-17373		ច
Test TMR-15723 vol. 11, TGK-6.0		Test	Vol. 1X, SSX-13.0	TWR-17098		ບ
Test   Twi-15725 vol.   Kr. 160-21.4   Twi-17591		Test	Vol. 11, TGX-4.0 &	S41384AR3		ວ
3.3.6.1.1 Structural Sf Anal TWR-15723 vol. IX, 15X-1.0 TWR-19941  3.3.6.1.1 Structural Sf Anal TWR-15723 vol. IX, ASV-1.0 TWR-18136, TWR-50019  Anal TWR-15723 vol. IX, ASV-2.0 TWR-18136, TWR-50019  Test TWR-15723 vol. IX, ASV-2.0 TWR-18252  Test TWR-15723 vol. IX, ASV-1.0 TWR-18252  Anal TWR-15723 vol. IX, ASV-1.0 TWR-18252  Anal TWR-15723 vol. IX, ASV-1.0 TWR-18252  Anal TWR-15723 vol. IX, ASV-1.0 TWR-18374  Anal TWR-15723 vol. IX, ASV-1.0 TWR-18374  Anal TWR-15723 vol. IX, SSY-1.0 TWR-18305  Test TWR-15723 vol. IX, SSY-1.0 TWR-18305  Test TWR-15723 vol. IX, SSY-1.0 TWR-18305  Test TWR-15723 vol. IX, SSY-1.0 TWR-18374  3.3.6.1.1.2.b. Achesive bonds  Anal TWR-15723 vol. IX, ASV-1.0 TWR-18374  Anal TWR-15723 vol. IX, ASV-1.0 TWR-18374  Anal TWR-15723 vol. IX, ASV-1.0 TWR-18374  Anal TWR-15723 vol. IX, ASV-1.0 TWR-18374  Anal TWR-15723 vol. IX, ASV-1.0 TWR-18374  Anal TWR-15723 vol. IX, ASV-1.0 TWR-18374  Anal TWR-15723 vol. IX, ASV-1.0 TWR-184156, TWR-19679  Anal TWR-15723 vol. IX, ASV-1.0 TWR-184156, TWR-19679  Anal TWR-15723 vol. IX, ASV-1.0 TWR-184156, TWR-19679  Anal TWR-15723 vol. IX, ASV-1.0 TWR-18671  Anal TWR-15723 vol. IX, ASV-1.0 TWR-18671  Anal TWR-15723 vol. IX, ASV-1.0 TWR-18671  Anal TWR-15723 vol. IX, ASV-1.0 TWR-18671  Anal TWR-15723 vol. IX, ASV-1.0 TWR-18671  TWR-18724 TWR-15723 vol. IX, ASV-1.0 TWR-18671  TWR-18725 vol. IX, ASV-1.0 TWR-18871  Test TWR-15723 vol. IX, ASV-1.0 TWR-18671  TWR-18725 vol. IX, ASV-1.0 TWR-18871  TWR-18722 vol. IX, ASV-1.0 TWR-18871  TWR-18722 vol. IX, ASV-1.0 TWR-18871  TWR-18722 vol. IX, ASV-1.0 TWR-18871  TWR-18722 vol. IX, ASV-1.0 TWR-18871  TWR-18722 vol. IX, ASV-1.0 TWR-18871  TWR-18722 vol. IX, ASV-1.0 TWR-18871  TWR-18722 vol. IX, ASV-1.0 TWR-18871  TWR-18722 vol. IX, ASV-1.0 TWR-18871  TWR-18722 vol. IX, ASV-1.0 TWR-18871  TWR-18722 vol. IX, ASV-1.0 TWR-18871  TWR-18722 vol. IX, ASV-1.0 TWR-18871  TWR-18722 vol. IX, ASV-1.0 TWR-18871  TWR-18722 vol. IX, ASV-1.0 TWR-18722 vol. IX, ASV-1.0 TWR-18722 vol. IX, ASV-1.0 TWR-18722 vol. IX, ASV-1.0 TWR-18722 vol. IX		Test	٠, ١	TWR-17591		ច ថ
3.3.6.1.1 Structural SF Anal TRR-15723: Vol. IX, ASV-B.O TWR-16136, TRR-50019  Anal TRR-15723: Vol. IX, ASV-B.O TWR-16503  Anal TRR-15723: Vol. IX, ASV-1.0 TWR-16305  Test TRR-15723: Vol. IX, SSY-1.0 TWR-18305  Test TRR-15723: Vol. IX, ASV-B.O TWR-18305  Anal TRR-15723: Vol. IX, ASV-B.O TWR-18305  Anal TRR-15723: Vol. IX, ASV-B.O TWR-18305  Test TRR-15723: Vol. IX, ASV-B.O TWR-18305  Test TRR-15723: Vol. IX, ASV-1.0 TWR-18305  Test TRR-15723: Vol. IX, SSX-1.0 TWR-18305  Test TRR-15723: Vol. IX, SSX-B.O TWR-18305  Test TRR-15723: Vol. IX, SSX-B.O TWR-18305  Test TRR-15723: Vol. IX, SSX-B.O TWR-18305  Test TRR-15723: Vol. IX, SSX-B.O TWR-18305  Test TRR-15723: Vol. IX, ASV-1.0 TWR-18305  Test TRR-15723: Vol. IX, ASV-1.0 TWR-18305  Anal TRR-15723: Vol. IX, ASV-1.0 TWR-18305  Anal TRR-15723: Vol. IX, ASV-1.0 TWR-18305  Anal TRR-15723: Vol. IX, ASV-1.0 TWR-18305  TWR-180019  TWR-1800109  TWR-1800109  TWR-1800109  TWR-1800109  TWR-1800109	3.3.3.0 Harness and captes	7001	Vol. 1X,	Tab-1004		3 Z
Anal TWR-15723 vol. IX, ASV-8.0 TWR-16405 Test TWR-15723 vol. IX, ASV-1.0 TWR-16405 Test TWR-15723 vol. IX, ASV-1.0 TWR-18305 Test TWR-15723 vol. IX, ASV-1.0 TWR-18374 Anal TWR-15723 vol. IX, ASV-1.0 TWR-18374 Anal TWR-15723 vol. IX, ASV-1.0 TWR-18374 Anal TWR-15723 vol. IX, ASV-1.0 TWR-18305 Test TWR-15723 vol. IX, ASV-1.0 TWR-18305 Test TWR-15723 vol. IX, SSX-1.0 TWR-18305 Test TWR-15723 vol. IX, SSX-1.0 TWR-18305 Test TWR-15723 vol. IX, SSX-1.0 TWR-18305 Test TWR-15723 vol. IX, SSX-1.0 TWR-18305 Test TWR-15723 vol. IX, SSX-1.0 TWR-18305 Test TWR-15723 vol. IX, SSX-1.0 TWR-18305 Test TWR-15723 vol. IX, ASV-1.0 TWR-18374 Anal TWR-15723 vol. IX, ASV-1.0 TWR-18374 Anal TWR-15723 vol. IX, ASV-1.0 TWR-18305 Anal TWR-15723 vol. IX, ASV-1.0 TWR-180305 Anal TWR-15723 vol. IX, ASV-1.0 TWR-180305 TWR-18005 TWR-18006 Anal TWR-15723 vol. IX, ASV-1.0 TWR-180305 TWR-18005 TWR-18006 Anal TWR-15723 vol. IX, ASV-1.0 TWR-18005 TWR-18005		Age !	Vol.		019	ט כ
Anal TWR-15723: Vol. 1K, AVS-12  3.3.6.1.1.1 General Safety Factors Simi TWR-15723: Vol. 1K, ASV-8.0  Anal TWR-15723: Vol. 1K, ASV-8.0  Anal TWR-15723: Vol. 1K, ASV-10  Anal TWR-15723: Vol. 1K, ASV-10  Test TWR-15723: Vol. 1K, ASV-10  Test TWR-15723: Vol. 1K, SSK-10  Test TWR-15723: Vol. 1K, SSK-10  Test TWR-15723: Vol. 1K, SSK-10  Test TWR-15723: Vol. 1K, SSK-10  Test TWR-15723: Vol. 1K, SSK-10  Test TWR-15723: Vol. 1K, SSK-10  TWR-1657  3.3.6.1.1.2.b. Adhesive bonds  Anal TWR-15723: Vol. 1K, ASV-10  TWR-18374  Anal TWR-15723: Vol. 1K, ASV-10  TWR-18374  Anal TWR-15723: Vol. 1K, ASV-10  TWR-18374  Anal TWR-15723: Vol. 1K, ASV-10  TWR-18374  Anal TWR-15723: Vol. 1K, ASV-10  TWR-18375  Anal TWR-15723: Vol. 1K, SSK-10  TWR-18375  Anal TWR-15723: Vol. 1K, SSK-10  TWR-18375  Anal TWR-15723: Vol. 1K, SSK-10  TWR-18375  Anal TWR-15723: Vol. 1K, SSK-10  TWR-18375  Anal TWR-15723: Vol. 1K, SSK-10  TWR-18375  Anal TWR-15723: Vol. 1K, SSK-10  TWR-18375  Anal TWR-15723: Vol. 1K, SSK-10  TWR-18375  Anal TWR-15723: Vol. 1K, SSK-10  TWR-18375		Anal	Vol. IX,			ວ
Test TWR-15723: Vol. IX, SSK-1.0 TWR-18305  Test TWR-15723: Vol. IX, SSK-3.0 TWR-18252  3.3.6.1.1.1 General Safety Factors Simi TWR-15723: Vol. IX, ASV-1.0 TWR-16405  Anal TWR-15723: Vol. IX, ASV-1.0 TWR-16405  Anal TWR-15723: Vol. IX, ASV-1.0 TWR-18305  Test TWR-15723: Vol. IX, SSK-1.0 TWR-18305  Test TWR-15723: Vol. IX, SSK-1.0 TWR-18305  Test TWR-15723: Vol. IX, SSK-1.0 TWR-18252  Test TWR-15723: Vol. IX, SSK-3.0 TWR-18252  3.3.6.1.1.2.b. Adhesive bonds  Anal TWR-15723: Vol. IX, ASV-1.0 TWR-18306  Anal TWR-15723: Vol. IX, ASV-1.0 TWR-18305  TWR-18016  Anal TWR-15723: Vol. IX, ASV-1.0 TWR-1809:508, TWR-19679  TWR-18017  Anal TWR-15723: Vol. IX, ASV-1.0 TWR-18305  TWR-18018  Anal TWR-15723: Vol. IX, ASV-1.0 TWR-18305  TWR-18018  Anal TWR-15723: Vol. IX, ASV-1.0 TWR-18019		Anal	Vol. IX,	TuR-19679		ັວ
1.3.6.1.1.1 General Safety Factors Simi TWR-15723: Vol. IX, SSN-3.0 TWR-18252  Anal TWR-15723: Vol. IX, ASV-1.0 TWR-18374  Anal TWR-15723: Vol. IX, ASV-1.0 TWR-18374  Anal TWR-15723: Vol. IX, ASV-1.0 TWR-18305  Test TWR-15723: Vol. IX, SSX-1.0 TWR-18305  Test TWR-15723: Vol. IX, SSX-1.0 TWR-18305  Test TWR-15723: Vol. IX, SSX-1.0 TWR-18305  Test TWR-15723: Vol. IX, SSX-3.0 TWR-18252  3.3.6.1.1.2.b. Adhesive bonds Siml TWR-15723: Vol. IX, ASV-1.0 TWR-18374  Anal TWR-15723: Vol. IX, ASV-1.0 TWR-18374  Anal TWR-15723: Vol. IX, ASV-1.0 TWR-18305  TWR-18305  TWR-18305		Test	Vol. IX,	TAR-18305		ប
3.3.6.1.1.2 Bond Safety Factors  5.3.6.1.1.2 Bond Safety Factors  Anal TWR-15723: Vol. IX, ASV-1.0  Anal TWR-15723: Vol. IX, ASV-1.0  Anal TWR-15723: Vol. IX, ASV-1.0  Test TWR-15723: Vol. IX, SSX-1.0  Test TWR-15723: Vol. IX, SSX-1.0  Test TWR-15723: Vol. IX, SSX-1.0  Test TWR-15723: Vol. IX, SSX-1.0  TWR-18354  TWR-18723: Vol. IX, ASV-1.0  TWR-1836, TWR-17245  TWR-18723: Vol. IX, SSX-1.0  TWR-18374  TWR-18723: Vol. IX, ASV-1.0  TWR-18374  TWR-18723: Vol. IX, ASV-1.0  TWR-18374  TWR-18723: Vol. IX, ASV-1.0  TWR-18374  TWR-18723: Vol. IX, ASV-1.0  TWR-18374  TWR-18723: Vol. IX, ASV-1.0  TWR-18374  Anal TWR-15723: Vol. IX, ASV-1.0  TWR-18374  TWR-18374  Anal TWR-15723: Vol. IX, ASV-1.0  TWR-18374  Anal TWR-15723: Vol. IX, SSX-1.0  TWR-18375  TWR-18375		Test	Vol.	TUR-18252		ច
Anal Tur-15723 Vol. IX, ASV-1.0  Anal Tur-15723 Vol. IX, ASV-1.0  Anal Tur-15723 Vol. IX, ASV-1.0  Tur-16709  Tur-16807  Tur-16807  Tur-16807  Tur-16807			× ×	TWR-18374		วี ข
Anal TuR-15723: Vol. IX, SSX-1.0 TuR-18136, TuR-17036, TuR-18871, TuR-50019 Test TuR-15723: Vol. IX, SSX-12.0 TuR-17243 Test TuR-15723: Vol. IX, SSX-12.0 TuR-17243 Test TuR-15723: Vol. IX, SSX-12.0 TuR-18252  3.3.6.1.1.2.b. Adhesive bonds Siml TuR-15723: Vol. IX, ASV-1.0 TuR-18136, L223:FY89:508, TuR-19679 Anal TuR-15723: Vol. IX, ASV-1.0 TuR-19679 Anal TuR-15723: Vol. IX, SSX-1.0 TuR-18871 Test TuR-15723: Vol. IX, SSX-1.0 TuR-18871 Test TuR-15723: Vol. IX, SSX-1.0 TuR-18871 Test TuR-15723: Vol. IX, SSX-1.0 TuR-18871		Anal	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	148-19679		5 2
Test TuR-15723: Vol. 1K, SSX-1.0 TuR-17243  Test TuR-15723: Vol. 1K, SSX-12.0 TuR-17243  Test TuR-15723: Vol. 1K, SSX-12.0 TuR-17245  Test TuR-15723: Vol. 1K, SSX-3.0 TuR-18252  TuR-18252  3.3.6.1.1.2.b. Adhesive bonds Siml TuR-15723: Vol. 1K, ASV-1.0 TuR-18374  Anal TuR-15723: Vol. 1K, ASV-1.0 TuR-19679  Anal TuR-15723: Vol. 1K, ASV-1.0 TuR-19679  Anal TuR-15723: Vol. 1K, SSX-1.0 TuR-18871  Test TuR-15723: Vol. 1K, SSX-1.0 TuR-18871		Anal	Vol. IX.		7036, TWR-18871, TWR-50019	ວ
3.3.6.1.1.2 Bond Safety Factors Anal TWR-15723: Vol. 1X, SSX-1.0  Twr-17243 Test Twr-15723: Vol. 1X, SSX-12.0  Twr-17245 Twr-17245 Twr-17245 Twr-17245 Twr-17245 Twr-17245 Twr-17245 Twr-17245 Twr-17245 Twr-17245 Twr-17245 Twr-17245 Twr-17245 Twr-17245 Twr-17245 Twr-15723: Vol. 1X, SSX-1.0 Twr-18375 Twr-18375 Twr-18375 Twr-18375 Twr-18375		Test	Vot. IX,		•	ວ
3.3.6.1.1.2 Bond Safety Factors x 3.3.6.1.1.2.b. Adhesive bonds Siml TWR-15723: Vol. IX, SSX-3.0 TWR-18252 Anal TWR-15723: Vol. IX, ASW-1.0 TWR-18374 Anal TWR-15723: Vol. IX, ASW-1.0 TWR-1973: FY89:508, TWR-19679 Anal TWR-15723: Vol. IX, ASW-1.0 TWR-19679 Anal TWR-15723: Vol. IX, SSX-1.0 TWR-18871 TEST TWR-15723: Vol. IX, SSX-1.0 TWR-18305		Test	Vol. IX,	TuR-17243		ວ
3.3.6.1.1.2 Bond Safety Factors x x x 3.3.6.1.1.2 Bond Safety Factors x 3.3.6.1.1.2.b. Adhesive bonds Siml TWR-15723: Vol. IX, ASW-1.0 TWR-18374 Anal TWR-15723: Vol. IX, ASV-1.0 TWR-50019 Anal TWR-15723: Vol. IX, ASV-1.0 TWR-19679 Anal TWR-15723: Vol. IX, SSX-1.0 TWR-18871 TWR-18305		Test	Vol. IX,	TUR-17245		ັບ
3.3.6.1.1.2 Bond Safety Factors x 3.3.6.1.1.2.b. Adhesive bonds Siml TWR-15723: Vol. IX, ASW-1.0 TWR-18374 Anal TWR-15723: Vol. IX, ASV-1.0 TWR-1836, L223:FY89:508, TWR-19679 Anal TWR-15723: Vol. IX, ASV-12 TWR-18679 Anal TWR-15723: Vol. IX, SSX-1.0 TWR-18871 TWR-18305		Test	Vol. IX,	Tur-18252		ō
3.3.6.1.1.2.b. Achesive bonds Siml TWR-15723: Vol. IX, ASW-1.0 TWR-18374  Anal TWR-15723: Vol. IX, ASW-1.0 TWR-18136, L223:FY89:508, TWR-19679  Anal TWR-15723: Vol. IX, ASW-12 TWR-19679  Anal N/A  Test TWR-15723: Vol. IX, SSX-1.0 TWR-18305	3.3.6.1.1.2 Bond Safety Factors	×				
Anal IMR-19/25: Vol. IX, ASV-1.0 IMR-18136, L225: F789: 508, TMR-19679 Anal TWR-15723: Vol. IX, ASV-12 TWR-50019 Anal N/A Anal N/A TWR-15723: Vol. IX, SSX-1.0 TWR-18871 TWR-18871 Test TWR-15723: Vol. IX, SSX-1.0 TWR-18305	3.3.6.1.1.2.b. Achesive bonds	Sim.	Vol.			ت ت
Anal TWR-15723: Vol. IX, ASV-1.0 TWR-19679 Anal N/A TWR-15723: Vol. IX, SSX-1.0 TWR-18871 Test TWR-15723: Vol. IX, SSX-1.0 TWR-18305		Ana	× :		189:508, TMR-19679	5 i
Anal N/A Test TWR-15723: Vot. IX, SSX-1.0 TWR-18305		Ana c	۲ کا کا کا	TAR-50019		5 2
TWR-15723: Vol. 1X, SSK-1.0 TWR-18305	·	A SE	יאויין אין יאן יאן יאן יאן יאן יאן יאן יאן	Tue - 18871		3 2
		Test	TWR-15723: Vol. IX, SSK-1.0	TWR-18305		; 5

		TAB REDESIGNED SOLI HARDMARE CE. JOINT PRO	TABLE 7.12-3 REDESIGNED SOLID ROCKET BOOSTER MOTOR HARDWARE CERTIFICATION MATRIX JOINT PROTECTION SYSTEM		
REQUIREMENT	METHOD		IMPLEMENTING	EVIDENCING	STATUS
	Test	TWR-15723: Vot. 1	IX, SSX-3.0	Tur - 18252	Closed
3.3.6.2 Allowable Mechanical Properties	Sial	٠ اه		TWR-18374	Closed
	A	\ \ \ \ \	IX, ASV-8.0	TWR-16405	Closed
	Anal	۷٥ دا	IX, ASV-1:0 & ASV-2.0	TWR-18136, TWR-50019	Closed
	Anal		•		Closed
	Test	N/A		TWR-18480, TWR-18181, TWR-18011 A,B, & E	Closed
	Test	-15723: Vol.	1x, ssx-3.0	TWR-17273	Closed
	Test	Vol.	1X, SSX-11.0	TWR-17230	Closed
3.3.6.3 Ultimate Combined Loads	Siml	Vol.		TWR-18617	Closed
	Anal	Vol.		TWR-18136, TWR-50019	Closed
	Anal	Vol.	IX, ASV-12	TWR-19679	Closed
	Anal	N/A	•	TWR-18871	Closed
3.3.6.5 Life Factors	Anal	-15723: Vol.	1X, ASW-1.0	TWR-18374	Closed
	Anal	TWR-15723: Vol. 1	IX, ASV-1.0, ASV-2.0	TWR-18136, TWR-50019	Closed
	Test	TWR-15723: Vol. 1	1x, ssx-12.0	TWR-17245	Closed
3.3.6.8 Adhesive Bonding	dsu	TWR-15723: Vol. 1		ROW-0555R2	Closed
3.3.8 Materials	Insp	TUR-15723: Vol. 1	11, 1GA-384.0	TWR-40258	Closed
3.3.8.1 Moisture & Fungus Resistance	Insp	TUR-15723: Vol. 1	11, 1GA-385.0, 386.0	TWR-40258	Closed
3,3.8.2 Corrosion of Metal Parts	×				
3,3,8,2a Corrosion Protection	Insp	TWR-15723: Val. 1	11, 1GA-389.0	TWR-40258	Closed
3.3.8.2b Stress Corrosion	Insp	TWR-15723: Vol. 1	11, 1GA-532.0	TWR-40258	Closed
	Test	Vol.	IX, TSX-7.0	TWR-18136	Closed
3.3.8.3 Flammability, Odor, and	Insp	TWR-15723: Vol. 1	11, 1GA-538.0	TWR-40258	Closed
Offgassing					;
3.3.9 Contamination Control	dsul	TWR-15723: Vol. 11, 1GB-85.0	1, 168-85.0	RDW-0551R2	Closed

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DOCUMENT NUMBER	REVISION	DOCUMENT DESCRIPTION OR TITLE	RELEASE STATUS
2630-33-00007		MTI Management Procedure: Propellant Burn Rate	Yes
2831-FY89-M48		Burn Rate and Mechanical Properties Data for RSRM-4	Yes
CTP-0050	A	Qualification Test OPT Overpressure	Yes
CTP-0051		Qualification Test Plan for DFI/OFI/OGI Cables	Yes
CTP-0053	A	Qualification Test Plan for Current Jumper Assy Test	Yes
CTP-0075	A	Qual. Test Plan, S&A Performance Under Power Spike	Yes
CTP-0082	В	Qual. Test Plan for Inflight Lightning Path Test	Yes
CTP-0105	В	Space Shuttle TEM #5 Static Test Plan	Yes
CTP-0141	A	Test Plan to Evaluate Dow Corning 321 Dry Film Lubr.	Yes
EMA-87-R-63		Lightning Protection Analysis	Yes
ETP-0090		Aluminum Systems Tunnel	Yes
ETP-01 <b>79</b>		Temp. and Humdty. effcts on Silane Primer Bonds	Yes
ETP-0232		Extruded Cork EPDM Rubber Test Plan	Yes
L223:FY89:508		Interoffice Memo: Closure CEI para 3.2.1.11d, 3.2.3.1	Yes
MFSC 16A00100D		MFSC Lightning Protection Analyses	Yes
MIP-STW7-2869	В	Special Bolt 1U51450, Refurb., Acceptance Criteria for	Yes
NSTS-16007	D	Launch Commit Criteria	Yes
OMRSD File V Vol. I		Operation Maintenance Requirements & Specs. Document	Yes
RDW-0528	R5	Reusability for Initial Flights	Yes
RDW-0541		Nozzle-to-Case Joint O-ring	Approved
RDW-0549		Deviation: Welding	Approved
RDW-0551	R2	Hardware built without complete contamination controls	Approved
RDW-0551	R3	Hardware Built Without Complete Contamination Controls	No
RDW-0555	R2	Hardware Bonding	Approved
RDW-0555	R3	Hardware Bonded without Adhesive Bonding Controls	Approved
RDW-0569	R2	Materials 5 year storage life.	Approved
RDW-0569	R3	Materials do not Meet 5 Year Storage life	Approved
RDW-0571		EEE Component Selection	Approved -
RDW-0573	R2	Deviation: Forward Segment Transition Regions SF.	Approved
RDW-0579	R2	Deviation, Safety Factors, Loads	Approved
RDW-0580	R6	Safety and Arming Device NSTS 08060 Drop Test Require.	Approved
RDW-0596	R2	Deviation: Material Characterization, Polysulfide	Approved
RDW-0596	R3	No Material Characterization for Polysulfide Adhesive	Approved
RDW-0599	R2	Transportation Loads	Approved
RDW-0600	R1	Deviation: FJPS Structural Analysis	Approved
RDW-0601		General S.F., adhesive bond S.F.	Approved
RDW-0603		Deviation: Humidity Tests	Approved
RDW-0603	R3	Humidity tests not Performed	Approved
RDW-0604	R2	FWD Exit Cone and AFT Exit Cone Safety Factors	Approved
RDW-0606 RDW-0607		Transportation Monitoring Requirements Not Met Deviation: Fracture Mechanics Analysis	No Approved
	0.1	•	Approved
RDW-0608 RDW-0610	R1	Reusability Five Year Storage S & A	Approved
			Approved
RDW-0613	<b>D4</b>	Deviation, Improper wire used in cables	Approved
RDW-0615	R1	Insulation Safety Factor In FWD Segment Not Met	Approved Approved
RDW-0616	R1	S & A Five Year Storage Verification Not Complete	• •
RDW-0617	D4	Leak check port plugs not positively locked	Approved
RDW-0621 RDW-0626	R1	Fracture Mechanics Anal. of the RSRM Case Joint & Ignit Igniter Outer Bolts do not Meet 1.40 SF.	Approved
		Protective Finishes per MSFC-SPEC-250 Not Met	*
RDW-0627 RWW-0443		Waiver, Harness and Cables	Approved
kww-0443 \$40242M		RSRM CIL Waiver Change Request	Yes
540242M S40242N		RSRM CIL Waiver Change Request	Yes
540242# \$41383		Waiver: Lightning Protection Criteria	Approved
541384AR3		Waiver: NSTS 20007, Lightning Protection Verification	Approved
594991A		PRCBD, RSRM S&A Device Test Requirements	Yes
574771A STS-84-0575		SS IVBC-3 Aerodynamic Heating Databook SRB - Ascent	Yes
STW3-2654	E	Space Shuttle SRM Safety and Arming Device	Yes
stw7-2888	-	Proof Testing of Rocket Motor Nozzle Fixed Housing	Yes

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DOCUMENT NUMBER	REVISION	DOCUMENT DESCRIPTION OR TITLE	RELEASE STATE
stw7-3344		Standardization of SS Project SRM Propellant	Yes
stw7-3449		Achesive Bonding	No
STW7-3497	A	RSRM Nozzle flex Bearing	Yes
THA-1066	Н	SS SRM Systems Maintenance Analysis Document	Yes
TWR-10192	F	Material Selection and Control Plan for Sace Shuttle	Yes
TWR-10211-86		Mass Properties Quarterly Status Space Shuttle SRM	Yes
TWR-10211-94		Mass Properties Quarterly Status Report	Yes
TWR-10211-95		Mass Properties Quarterly Status Report	Yes
TWR - 10405		Similarity Report for OFI & DFI Pressure Transducers	Yes
TWR-11048		Thermal Evaluation of an SRM Center Segment	Yes
TWR - 11091		Thermal Analysis of the SRM Center Segment	Yes
TWR-11103		Safety and Arming Device Test Plan Qualification Tests	Yes
TWR-11196	A	Analysis of Prototype S/S Flexible Bearing	Yes
TWR-11559		Test Report SRM Ign. Chamber & Adapter Assy Hydroburst	Yes
TWR-11712		Test Plan SRM Rail Transp. and Rail Coupling Test	Yes
rwr-11913		Test Plan SRM Rail Transp. & Rail Coupling Test GTM-4	Yes
rur-11915		SS SRM Corrosion Resistance Preservative	Yes
rwr-12130		Qual. Test, High Output Pressure Transducer	Yes
TWR-12198		Safery and Arming Device Qualification Test	Yes
run - 12343		Test Results For SRM Inert Forward Segment	Yes
TWR-12646	2	Test Plan for SS Development Motor No. 5 Static Test	Yes
TWR - 12731		Storage Lige Operation Pressure Transducer	Yes
TWR - 12932	С	Final Report - S & A Device Shipping Storage Container	Yes
rwr - 13157		Delta Qual Nozzle Severance System	Yes
run-13219		\$ & A Device Test Plan for Full Scale Final Evaluation	Yes
run - 13220		full Scale Final Evaluation (Lot AAA) (Delta Qual)	Yes
rwr - 13230	1	S/S SRM Qual. Test Report for Nozz. Severance System	Yes
rwr - 13380		Predicted Ballistic Perf. Characteristics for SS	Yes
rwr - 13694	8	RSRM Aluminum Systems Tunnel Structural Analysis	Yes
rwr-13880	В	SRM Operational Logistics Support Plan	Yes
rwr-14279		SRM Propellant Process Hazards	Yes
rwr-14415	J	Historical Ballistics/Hardware Assessment Database	Yes
rwr - 15520	-	Five Year Aging of TP-H1148	Yes
rwr - 15723	C	Development and Verification Plan for the RSRM	Yes
TWR-15763		Joint Flexible Heater Thermal Test	Yes
TWR - 15832		SRM Launch Constraints	Yes
TWR - 16097	A	Thermal Analysis/Verification of Joint Heater Design	Yes
TWR-16100	A	Structural Analysis of SRM Modified Ignition System	Yes
rwr-16101	A	Structural Analysis of SRM Modified Ignition System	Yes
rwr-16106		SRM 3224 Liner/SRM Igniter Qualification	Yes
rwr-16167		Insulation <u>Similarity</u> Analysis	Yes
rwr-16190	A	Factory Joint Insulation Seal Integrity	Yes
rwr - 16278	A	SRM Internal Insulation Design Database	Yes
rwr - 16339	В	Thermal Analysis of SRM Igniter Design Changes	Yes
WR-16380		TPTA 1.3 Quick Look Report	Yes
rwr - 16390		In Flight Lightning Path Test Report	Yes
WR-16404		Igniter Heater Thermal Analysis	Yes
WR-16405		Igniter Heater Structural Anal.	Yes
WR-16495	A	Comments on MSFC-HDBK505 Rev A as it applied to RSRM	Yes
WR-16496	В	Thermal Response: Redesigned Field & Factory Joints	Yes
WR-16517	Č	Thermal Performance, Steel System Tunnel	Yes
WR-16526	Ă	Thermal Response of Stiffener Rings and Stubs	Yes
WR-16527	-	Thermal Response of SRM Case Acreage	Yes
WR-16538		Thermal Analysis of RSRM Nozzle Plug	Yes
WR-16541		Nozzie plug Temp, Humidity, Pressure Test Report	Yes
WR-16542		RSRM Nozzle Foam Plug High Rate Press. Final Test Rep.	Yes
WR - 16563		Structural Analysis of RSRM Nozzle Plug	Yes
WR-16564	A	Contamination Control Plan	Yes
TWR-16572		STS 61-B (SRM-23) Nozzle Component Postflight Report	Yes

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DOCUMENT NUMBER	REVISION	DOCUMENT DESCRIPTION OR TITLE	RELEASE STATUS
TWR - 16574		Field Joint Heater Test-11 Final Test Report	Yes
TWR-16604	A	Launch Pad Natural Environments	Yes
TWR-16671		Aluminum Systems Tunnel Bonding System	Yes
TWR-16717	A	Design Compliance Report for ICD-3-44005 Rev D	Yes
TWR-16739		Thermal Environments, MTI to KSC and Vandenburg	Yes
TWR-16742	A	RSRM Internal Insulation Design Definition Analysis	Yes
TWR-16752		STA-3 Engineering Test Report	Yes
TWR-16755		NJES 2A Final Test Report	Yes
TWR-16766	A	Thermal Fields Around Space Shuttle	Yes
TWR-16768		JAD-2 Final Test Report	Yes
TWR - 16801	A	Structural Loads Book	Yes
TWR-16821		SRM Structural Material Handbook	Yes
TWR - 16829		ATA Final Test Report	Yes
TWR-16831		flex Bearing Temp/Torque Report	Yes
TWR-16851		Fungus Resistance of Aluminum System Tunnel Materials	Yes
TWR-16873	A	Fracture Control Plan for SS RSRM Case	Yes
TWR-16874	Ä	Fracture Control Plan for the SS RSRM Ignition System	Yes
TWR-16875	A	Fracture Control Plan for Space Shuttle RSRM Nozzle	*
TWR-16877	В	RSRM Mass Properties Uncertainty Analysis	Yes
TWR-16913-2		Forward-to-Aft Exit Cone Joint Leak Test Failure	Yes
TWR - 16940	С	RSRM Ballistics Performance Assessment	Yes
TWR-16942		Test Report 1.4 x MEOP Hydroproof Test	Yes
TWR-16948	A	Loads For Use In PLIZ Structure Analysis	Yes
TWR-16961	B	RSRM Propellant/Liner/Insul. Struct. Analy. Summary	Yes
TWR - 16969	В	External Cork Insulation Bondline Analysis	Yes
TWR-16975	В	RSRM Nozzle Stress Report	Yes
TWR - 17009	A	Global Thermal Environment Analysis	Yes
TWR-17011		NJES 2B Final Test Report	Yes
TWR-17015	В	Case Field Joint Redesign Flow/Thermal Analysis	Yes
TWR-17016	В	Nozzle/Case Joint Redesign Flow Thermal Analysis	Yes
TWR - 17033		Flow/Thermal Analysis of the Onpad .SR13	Yes
TWR-17035		External TPS Analysis of SRM Stiffener Rings and Stubs	Yes
TWR-17036	В	RSRM Factory Joint Insulation	Yes
TWR-17038	A	Insulation/Case Unbond Structural Analysis	Yes
TWR-17039		Mechanical Properties of SRM Propellant Grain Materials	Yes
TWR-17057	В	Propellant Grain Structural Integrity	Yes
TWR-17063	A	Thermal Evaluation of Development Flight Instr.	Yes
TWR-17082		RSRM CDR Summary Report, Seal Design	Yes
TWR-17098		Test Report Joint Heater Thermal Conductive Adhesive	Yes
TWR-17118 Sup. A,F	A	RSRM Case Structural Analysis	Yes
TWR-17127	В	Structural Analysis for Accelerometer Mounting Block	Yes
TWR-17190	В	Test Report: S-Joint Resiliency Test	Yes
TWR-17195	В	Structural Analysis of SRM Igniter Grain	Yes
TWR-17203		Aft Segment Inclusion, DM-9	Yes
TUR-17219	A	Aero/Thermal Analysis of the RSRM Nozzle	Yes
TWR-17221	A	Thermal Response of Nozzle Exit Cone and LSC Assembly	Yes
TWR-17226		DM-8 Sys. Tunnel Floor Plate Pull Test	Yes
TWR-17228		DM-9 Sys. Tunnel Floor Plate Pull Test	Yes
TUR-17229		FJPS Vent Valve Aging and Functional Test Results	Yes
TWR-17230		Cork Extrusion Mechanical Characterization Test Report	Yes
TWR-17231		DM-9 FJPS Weatherseal Pull Test Results	Yes
TWR-17242		Moisture Seal Integrity Test Final Report	Yes
TWR-17243		FJPS Windtunnel Test Report	Yes
TWR-17245		Heater Assembly Vibration Test Report	Yes
TWR-17247	8	Internal Insulation Qualification Report	Yes
TWR-17250	-	Nozzle Center Line Offset	Yes
TWR-17253		Summary of Electrical Analysis for FJPS	Yes
TWR-17265	В	RSRM Ignition System Structural Analysis	Yes
·	-	DM-9 Post Fire Hardware Evaluation	Yes

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#### TABLE 7.13 REFERENCED DOCUMENTS LIST

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DOCUMENT NUMBER	REVISION	DOCUMENT DESCRIPTION OR TITLE	RELEASE STATUS
TWR-17270		QM-6 FJPS Post-Test Inspection Final Report	Yes
TWR-17270 VOL V		QM-6 Nozzle Post Test Inspection Final Report	Yes
TWR-17271		QM-7 Post Test Hardware Evaluation	Yes
TUR-17272		Flight Motor Set 360L001 (STS-26R) Final Report	Yes
TWR-17272 Vol. VII	_	Flight Set 360L002 JPS Final Report	Yes
TUR-17273	A	Cable Bracket Bonds Structural Analysis	Yes Yes
TWR-17276 TWR-17280		Factory Joint Seal Integrity Igniter Gask-0-Seal Resiliency Test Report	Yes
TWR-17311		RSRM Nozzie Snubber Vectoring Clearance Study	Yes
TWR-17317	A	CEI Compliance Report, RSRM Nozzle	Yes
TWR-17322	^	Transport Thermal Analysis of Aft Segment	Yes
TWR-17323	A	RSRM Center Segment Transp. from MTI Space Oper to KSC	Yes
TWR - 17324	**	RSRM FWD Segment Transportation from MTI to KSC	Yes
TWR-17326		Transp. Thermal Analysis - Nozzle/Aft Exit Cone	Yes
TWR-17331		Mass Properties History Log Space Shuttle QM-8	Yes
TWR - 17358		Mass Properties History Log Space Shuttle 3600013 (LH)	Yes
TWR - 17359		Mass Properties History Log Space Shuttle 3609013 (RH)	yes
TWR-17367		Seal Material Properties Data Book	Yes
TWR - 17371		DM-9 Test Report	Yes
TWR-17371	Ā	DN-9 Final Test Report	Yes
TWR-17372	Ā	QM-6 Final Test Report	Yes
TUR-17373	A	QM-7 Final Test Report	Yes
TWR - 17405		Test Results and Three Dimensional Analysis JPS Heater Watt Density Analysis/Test Report	Yes Yes
TWR-17415 TWR-17416	A	SRB Aft Skirt Hot Gas Purge Analysis	Yes
TWR-17418	^	Heater Power Density Analysis, Tayco Part 266-4664	Yes
TWR-17453		Nozzle Joint Envimnt. Stimulator 3B Final Test Report	Yes
TWR - 17463		Nozzle Joint Envrmnt. Simulator 3A Final Test Report	Yes
TWR - 17469	A	NJES H3 Test Report	Yes
TWR-17526		Nozzle Nose Inlet Structural Test Report	Yes
TWR-17528	A	OPT/DFI Similarity Analysis	Yes
TWR - 17563		Transient Pressure Test Article 2.1 Test Report	Yes
TUR - 17591		QM-8 Test Report	Yes
TWR-17591 VOL V	A	QM-8 Final Test Report, Nozzle	Yes
TWR-17591 VOL VI		QM-8 FINAL TEST REPORT, IGNITION SYSTEM	Yes
TWR-17592		PVM-1 Final Test Report	Yes
TUR-17592 VOL VI		PVM-1 FINAL TEST REPORT, IGNITION SYSTEM	Yes
TUR-17597		RSRM Case Structural Analysis Handling Transportation	No
TWR-17611		ETM-1A Post Fire Evaluation	Yes Yes
TWR-17639 TWR-17644		TEM-03 Final Test Report Technical Eval. Motor No. 4 (TEM-4) Final Test Report	Yes
TUR-17649		TEM-05 Static Test Final Test Report	Yes
TWR-17654		Technical Evaluation Motor No. 6 (TEM-6) Final Test Rep	
TWR-17720		RSRM TP-H1148 Propellant Characterization Requirements	
TWR-17721		RSRM TP-H1178 Igniter Propellant Characterization	Yes
TUR-17729		RSRM Material Selection & Control Documentation	Yes
TWR-17741		Final Report for SRM Pyrotechnic Basket Assy Life Ext.	Yes
TWR-17795		Over-Pressure Test for OPT	Yes
TWR-17796	A	Lightning Transient Test	Yes
TWR-17797		EMC/EMI DFI Test Report	Yes
TWR-17798		Mech/Elect Test of Bonding Strap Report	No
TWR - 17808		Case Similarity Analysis	Yes
TWR-17855-2		SRM Significant Problem Report No. DR4-5 (5 day)	Yes
TWR-17872		Modified Igniter Qualification Test Final Report	Yes
TWR-17880	_	RSRM Teardown and Analysis Plan	Yes
TWR-17927	A	Transient Pressure Test Article	Yes
TWR-17941		SS RSRM Ignition System Modified Igniter LAT No. 38	Yes
TWR-17991 TUB-17002	A	RSRM Seal Design Summary Report	Yes
TWR - 17992		RSRM Seal Leak Design Summary Report	Yes

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DOCUMENT NUMBER	REVISION	DOCUMENT DESCRIPTION OR TITLE	RELEASE STAT
TWR - 18000		Joint Environment Simulator 3C Final Test Report	Yes
TWR-18011 A,B,E	A	RSRM Structural Mechanical Properties Data Book	Yes
TWR-18012	^	RSRM Propellant Grain Transportation Structural Integ.	Yes
TWR-18045		Flight Readiness Firing	Yes
TWR - 18063		Alum. Sys. Tunnel Ground strap Adhesive Qual. Test Rep.	
TWR - 18075		Transient Pressure Test Article Final Test Report	Yes
TWR-18076		Moisture Seal Test Report	Yes
TWR - 18085		DFI/OFI Cable Assembly Test	Yes
TWR - 18088		Useful Life and Storagee Effects Analysis for DFI/OFI	Yes
WR-18089		Material and EEE Parts Selection Analysis for DFI/OFI	Yes
WR-18091	A	Debris Prevention Analysis for DFI/OFI/OEI	Yes
rwr - 18133	Â	RSRM Internal Insulation Analysis	Yes
TWR-18136	Â	RSRM FJPS Structural Analysis and Component Testing	Yes
TWR-18147	^	S & A Device Global Analysis	Yes
rwk - 18157	A	S & A Device Similarity Analysis	Yes
rwr-18181	^	Test Results SRM FJP Kevlar Strap	Yes
rwr-18218		Replacement of EPDM With K5NA On Stiffener Stubs	Yes
WR - 18233		Similarity Analysis for Propellant/Liner	Yes
IWR - 18233 IWR - 18239		SS RSRM modified igniter rocket motor simil. analysis	Yes
		DM-9 Wedgeout	Yes
rwr - 18242 - 2 rwr - 18250		Igniter Seals Thermal Environmental Analysis	Yes
WR-18250		Heater Cable Bracket Bond Evaluation Test Results	Yes
WR - 18256	A	RSRM Ignition System Special Bolt Structural Analysis	Yes
	^	Extruded Cork/EA-934/NA KL-60-225 EPDM Rubber Bondline	Yes
WR - 18305		Erosion, Forward Exit Cone, DM-9	Yes
WR-18309-2			
WR-18371		Performance of Motors DM-8 and DM-9	Yes
WR - 18374	A	Similarity Analysis for RSRM JPS	Yes
WR-18407		QM-8 Quick Look Report	Yes
WR-18409		Test Rep. Hydrogen Embrtlmnt. Testing of Silane Primer	Yes
WR - 18428		TPTA 2.2 Final Test Report	Yes Yes
WR-18447	_	Reprt Temp. & Humdty effcts on Silane Primer Bonds	
WR-18450	Ą	Similarity Analysis for RSRM Systems Tunnel	Yes
WR - 18480	A	FJPS Moisture Seal Characterization Test Results	Yes
TWR - 18525		Global Analysis OFI/DFI	Yes
WR-18617		Similarity Analysis for RSRM Assembled Motor	Yes
WR - 18624		TPTA 1.3 Final Test Report	Yes
WR-18643		Test Report for a Hydroburst of an Igniter Assembly	Yes
WR - 18684		Acceptance Test Report S/S Flex Bearing (S/N 4R1)	Yes
WR - 18707		Acceptance Test Report S/S Flex Bearing (S/N 1R5)	Yes
WR - 18708		RSRM Segment/Railcar Scanner Test Report	Yes
WR-18733		S & A Performance Under Power Spike Conditions	Yes
WR - 18800		Igniter Heater Function Test	Yes
WR-18821		RSRM Exit Cone Severance System Similarity Analysis	Yes
WR - 18832		RSRM Segment/Railcar Scanner Test Report	Yes
'WR - 18871		JPS/Igniter Heater Cable Structural Bond Analysis	Yes
WR-18879	8	Removal of Cork Lid Over DFI & GEI Instru. Cables	Yes
WR-19050		Thrmal Respns of the Aft Dome Nzzl Husng; Re-enrty Heat	
WR-19052		Thermal Performance of Extruded Cork on Field Joint	Yes
WR-19281		QM-8 Systems Tunnel Pull Test Final Report	Yes
WR-19333		Final Test Report for -04 S & A (CTP-0131, REV. C)	No
WR-19540		Structural Integrity Analysis of RSRM 360H005 Aft Seg.	Yes
WR-19679		Replacement of Cork with K5NA over Kevlar Strap Clips	Yes
WR-19821		Preload Stress Analysis RSRM Handling Rings Tang End	Yes
WR - 19872		Systems Tunnel LSC Lightning Strike Final Test Report	Yes
WR-19899		Qual. Of Improved Joint Heaters Final Test Report	yes
WR-19912		Evaluation of Dow Corning 321 Dry Film Lubricant	Yes
WR-19941		Qual. RSRM F.J. Heater & Ign. to Case J.H. Power Cables	Yes
WR-40258		Re-Designed FJPS Material Qualification Summary	Yes
WR-50017		In-Flight Therm. Anal. of the Redsigned FJPS	Yes

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DOCUMENT NUMBER	REVISION	DOCUMENT DESCRIPTION OR TITLE	RELEASE STATUS
TWR-50018	A	Thermal Anal./Verification of SRM JPS Redesign Concept	Yes
TWR-50019		FJPS Redesign Concept 1 Structural Analysis	Yes
TWR-50021		Redesigned FJPS Moisture Qual. Final Test Report	Yes
TWR-60051		RSRM Carbon Fiber-Filled EPDM Structural Integrity	Yes
TWR-60122		Flash Report for -04 S & A (CTP-0131, Rev. C)	Yes
TUR-60135		Qual. of Enhanced Redesigned F.J. & Ign. Joint heaters	Yes
TWR-60380		Instrumentation Similarity Analysis	Yes
TWR-61086		Systems Tunnel CEI Compliance With MIL-STD Parts & Lock	Yes
TWR-61101		Systems Tunnel Material Qualification Summary	Yes
WTP-0076	8	Field Joint Protective Strap Test Plan	Yes
WTP-0080	A	Field Joint Heater Test II Weather Seal Shuttle/Vacuum	Yes
WTP-0103		Verification of SRM Factory Joint Pressure Seal	Yes
WTP-0125		Extending the Shelf Life of SRM Pyrotechnic Basket	Yes
WTP-0195		Systems Tunnel LSC Lightning Strike Test Plan	Yes

<sup>\* =</sup> SUBMITTED FOR CUSTOMER APPROVAL

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# APPENDIX A COMPLIANCE STATEMENTS

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Thickol CORPORATION SPACE OPERATIONS

### CS 02-01 COMPLIANCE STATEMENT COQ 18764-02 RSRM CASE, STIFFENER RINGS, CASE JOINTS

APPLICABLE PARAGRAPH: 3.3.1.1 Selection of Materials, Parts and Processes

IGA-107.0

The hardware complies with the intent of TWR-10192 and SE-019-094-2H.

Systems Integration & Project Engineering

Program Integration

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# CS 02-02 COMPLIANCE STATEMENT COQ 18764-02

RSRM CASE, STIFFENER RINGS, CASE JOINTS

APPLICABLE PARAGRAPH:

3.3.8 Materials

SUMMARY

IGA-384.0

VERIFICATION SUMMARY

SHEET

The Case/Stiffener Rings/Case Joints comply with this requirement. Whenever age sensitive materials have been used, a schedule for the replacement of those materials has been established.

Systems Integration & Project Engineering

Case Program Management

- Willy 5 Oct. 189

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# CS 02-03 COMPLIANCE STATEMENT COQ 18764-02 RSRM CASE, STIFFENER RINGS, CASE JOINTS

APPLICABLE PARAGRAPH:

3.3.8.1 Moisture, Fungus Resistance and

Oxidation

SUMMARY SHEET VERIFICATION SUMMARY

IGA-385.0

Case/Stiffener Rings/Case Joint components are in compliance with this requirement. Whenever a material has been used that is sensitive to moisture, fungus or oxidation, proper steps have been taken to ensure the integrity of the parts and/or the part have been properly designated as limited life items.

Systems Integration & Project Engineering

Case Program Management

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### CS 02-04 COMPLIANCE STATEMENT COQ 18764-02

RSRM CASE, STIFFENER RINGS, CASE JOINTS

APPLICABLE PARAGRAPH:

3.3.8.3 Flammability, Odor and Off-

gassing

SUMMARY SHEET VERIFICATION SUMMARY

IGA-538.0

Case/Stiffener Rings/Case Joints hardware components are in compliance with this requirement. The materials used in the

Case/Stiffener Rings/Case Joints were selected in

accordance with NHB 8060.1B.

ystems Integration &

Project Engineering

Jen 00200 J 001: 04

Case Program Management

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